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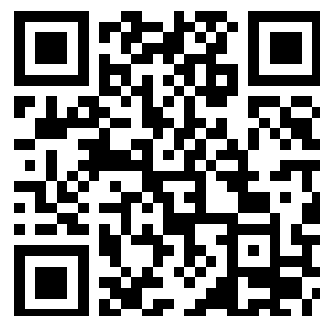
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THE Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.5°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 1, 10 a.m. Bar. 30.1, temp. 65°, Weather, Sunny.

A FEW years ago the fates seemed to have adopted the habit of contriving an early spring drought to frustrate the hopes of gardeners, or at all events of those who laboured on light soil. Just when the spring flowers were opening and seeds were being sown the drought came and worked much damage. This year a refinement of cruelty has been invented in the device of a late and wet spring succeeded by a prolonged June drought. When the first hot days came after the long spell of wet, every gardener's heart rejoiced, for at last there seemed to be a chance of getting the ground dry and seeds in. But as day succeeded day of hot sunshine, with occasionally one of low temperature and drying winds, the ground, except where long years of cultivation had converted it into real soil, passed with extraordinary rapidity from a water-logged to a sun-baked state. Not that the reserves of water in the soil were exhausted—far from it. There is still plenty of water in the deeper layers of the soil, but the surface layers—all important for seed sowing and planting of seedlings—become unamenable. It caked, and where any considerable amount of clay or silt entered into its composition

the clods refused to forego their lumpiness and to yield a tilth. Wise indeed was the gardener who, seeing how things were going, got out the hose betimes and gave the soil to be sown or planted a thorough soaking in the evening. When this was done prescience was rewarded and hoeing on the morrow gave a tilth. Where it was not done the surface went from bad to worse, and there are gardens which are still awaiting rain to make them fit for the reception of vegetable and flower seedlings that should have long ago been planted. Good, well-worked ground and well-established plants have taken no harm from the June drought. In fact there has not been a recent season when flowering shrubs and rock plants have done better. The capriciousness of the season has helped to beautify these parts of the garden—for plants, the blooms of which rarely open together, are now blooming brilliantly side by side. A Cytisus Andreanus, unaccountably late, blossoming after its fellows have finished, vies in floriferousness with Spartium junceum, which is a good month and more before its flowering time. Leycesteria formosa is already showing blossom and so is Polygonum baldschuanicum. Here and there the Plums, barren of fruit, are breaking into occasional blossom again. Cystus florentinus, the creamy blossoms of which are among the most beautiful of a beautiful genus, has already finished flowering, although the sturdier and larger-flowered C. corbariensis and C. crispum, with C. villosus—sturdiest of all—are producing daily their morning crops of flowers. Where their roots are deep in moist soil the Primulas have withstood the sun remarkably. P. japonica, P. pulverulentum, P. Cockburniana, and the graceful P. helodoxa have bloomed profusely, and in despite of hot suns are looking well enough. Nevertheless, the wise gardener who can spare the time keeps the hoe going amongst them or litters a light mulch around their crowns. The commercial grower of early vegetables and small fruits must have reason to deplore the June drought. Peas in Essex and Strawberries in Hampshire have suffered in diverse ways. The former crop would appear to be late and light, the latter heavy enough perhaps, but all the berries ripening together makes the season short and unprofitable. Birds, too, seem to have developed new or more determined propensities under the stress of the weather. Rooks have become predatory and taken to swooping down and tearing ducklings to pieces, and other birds have shown an uncanny skill in finding their way beneath the Strawberry net and destroying a prolific crop in a single morning. Where early Potatoes have been lifted the soil shows the ill-effects of premature drought and drying effect on crops. Instead of the nice, friable state which the Potato generally induces in the soil the ground is lumpy and must await a shower before it can be got ready for a second crop. For one thing at all events the gardener may bless the June drought, it has enabled him to make a determined and effective onslaught on weeds. Doubtless in old and well-laboured gardens weeds are always under control, but in newer gardens they have had and used exceptional opportunities during the past two or three years to reassume possession. But the hoe for the lighter ground and the mattock in the heavier, less-worked soil, have been busy among the weeds, and now, thanks to the June drought, the gardener has—or ought to have—these foes of the garden well in hand. Nevertheless it cannot be too strongly nor too often insisted upon that the

damage done by weeds, always great, is greatest in a dry season. For a piece of ground well stocked with weeds loses—owing to the vigorous transpiration which goes on from the leaves of weeds—the equivalent of three or more inches of rain in the course of the growing season. This is a serious loss when, as it would seem, the summer rainfall bids fair to be light.

The Cheshunt Experimental and Research Station.—On the 17th ult. Lord Bledisloe, Parliamentary Secretary to the Ministry of Agriculture, opened new laboratories at the Experimental Research Station, conducted under the auspices of the Nursery and Market Garden Industries Development Society at Cheshunt. The Experimental Station was started in 1914 by growers of glasshouse crops in the Lea Valley. Just support for the scheme was forthcoming from the Ministry of Agriculture and also from the County Councils of Hertfordshire, Essex and Middlesex. At the luncheon, at which Mr. H. O. Larsen, Chairman of the Development Society, presided, it was stated that the total area of glass in the Lea Valley Districts was about 1,400 acres, of which roughly, 875 acres were devoted to Tomatoes, 275 acres to Cucumbers, 75 acres to Grapes, 75 acres to Roses and Carnations and 100 acres to miscellaneous crops. In response to the toast of his health, Lord Bledisloe stated that the Tomato crop in the Lea Valley represented a production of something like 60,000 tons a year. It was the most intensive type of cultivation in the country and required highly skilled employees, an immense amount of labour and the perpetual application of up-to-date scientific methods. He stated it was estimated that loss due to insect and fungous pests represented at least ten per cent. of the whole value of horticulture, and in the case of glasshouses something nearer twenty per cent.—or it did so until research workers took the matter in hand. As the glasshouse products in the Lea Valley district were worth about £3,000,000 a year, it was easy to see what an immense sum was involved and how important it was to have the most expert scientific investigation. Dr. Bewley responded to the toast of "The Research Station" and stated that although at the present time they were concentrating upon the Tomato and Cucumber crops they looked forward to the day when new houses would be erected for the study of all diseases of greenhouse crops.

A Pioneer in School Gardening.—A large and representative gathering met the other evening to do honour to Mr. Lewis Gavin, F.E.I.S., Headmaster of Drumwhindle Parish School, Aberdeenshire, on his retirement, after thirty-seven years' service in the school. Warm tribute was paid Mr. Gavin for the admirable work he has done as the pioneer of school gardening, and the excellent training he has given to hundreds of pupils in the growing of flowers, fruits, and vegetables. So far back as 1897 we find in a Parliamentary Educational Blue Book the following:—"The teaching in the small rural school of Drumwhindle deserves to be singled out by special mention. In addition to sound theoretical work, each pupil is provided with several garden plots, where he personally experiments as to the effects of different manures and their suitability for various kinds of crops. The enthusiasm evoked shows how keenly this practical work is relished." To-day Drumwhindle School garden is a household word throughout the length and breadth of Scotland, and will ever be a lasting memorial to Mr. Gavin. It was here that hundreds of lads had first drilled into them the elements of initiative, practice, patience, and method. Here they were taught botany, chemistry, horticulture, forestry, and agriculture—ideal subjects for a rural district, as they inculcated love for

the country and the pursuits principally followed there. And in addition, Mr. Gavin never lost sight of the three essentials—reading, writing, and arithmetic. His, indeed, has been a great work, and has borne excellent fruit in generations of pupils, who look back upon their years at Drumwhindle with warm gratitude and even affection. The presents given to Mr. and Mrs. Gavin include a gold watch chain and a wallet well filled with Treasury notes, which was heartily subscribed to.

French International Technical Press Congress.—A Syndicate of French technical journals is arranging an International Congress to take place in Paris from the 1st to the 4th of October this year, shortly before the closing of the Exhibition of Decorative Arts. A full programme of discussions has been drawn up, and promises to be of interest to many technical journalists and proprietors. It would appear that horticulture scarcely ranks as an industry from the press point of view, as in the list of publications adhering to the syndicate—which are arranged under industries—neither horticulture nor gardening is given any place, while under "Agriculture" there are only nine papers, of which two only—*Gazette Agricole, Viticole et Horticole* and *La Vie à la Campagne*—can be said to be of horticultural interest. The *Gazette* we do not know, but *La Vie à la Campagne* is very little concerned with gardening, being chiefly a journal for fanciers.

Rhododendron ledoides.—This new dwarf Rhododendron, which received the R.H.S. Award of Merit, on May 19, when exhibited at the Chelsea Show, is much freer in bloom than the specimen with five flower trusses shown on that occasion (see Fig. 174, *Gard. Chron.*, June 6, 1925) would indicate. At Mount Charles, Truro, the residence of Arthur Nix, Esq., a plant has this season produced fifty-eight trusses. This Rhododendron will thus make a fine addition to the list of dwarf flowering shrubs cultivated in gardens, and especially on the rockery. Mr. Nix obtained his plant from Mr. J. C. Williams, whose great interest in Rhododendrons is shown by the large number of species and choice varieties he cultivates in his gardens at Caerhays.

Ayrshire Potato Sales.—In accordance with custom the annual auction sales of the growing crops of early Potatoes on the farms situated in the Girvan district of Carrick, began on Tuesday, June 16, and continued throughout the week. There was a large attendance of buyers, and as this was the first occasion since the outbreak of war on which the sales were open to the general public, a goodly number of spectators were present each day. Epicure is the only early variety grown on a commercial scale in south Ayrshire, and while the crops on the various farms appeared to be in fine condition, the opinion was generally entertained that the yield will not be so heavy as in former years. This consideration had, of course, a direct influence on prices which fluctuated more widely than usual and showed a considerable decline from the averages of 1924. Competition was fairly keen on the opening day when up to £90 per acre was paid, and proved to be the highest figures for the present series. One field of four acres sold so low as £35 per acre, but the average results of Tuesday worked out at £54 per acre. On Thursday prices declined to an average of £44 per acre but recovered on the following day to £47. So far as the sales have gone the average price realised has been £48, and the highest individual farm average falls to the credit of Mr. John Hannah, Girvan Main, whose nineteen lots, aggregating about two-hundred-and-twenty-five acres, gave a return of £59 per acre over all.

Autumn Horticultural Exhibition in Paris.—The Société Nationale d'Horticulture de France will hold its annual autumn exhibition in the Champs de Mars, Paris, from October 23 to November 1. All sections of horticulture are to be represented, including

works of art bearing on the subject. As usual, the highest award, the "Grand Prix d'Honneur," is to be reserved for a grower, to the exclusion of merchants; and a "prix d'honneur" may also be awarded to the best amateur exhibit.

The Keeper of the Wisley Gardens.—Very great interest has been aroused among gardeners by the proposal of the Council of the Royal Horticultural Society to appoint a keeper of its Gardens at Wisley. The duties attaching to such an important position are necessarily onerous, and all the qualifications needed to fill it are not likely to be found in any one man. The Selection Committee and the Council must have had a very difficult task in choosing from the large number of applicants for the post, but no one is likely to quarrel with their decision to appoint Mr. R. Findlay, who, however, does not claim all the qualifications set forth in our leading article in the issue of May



MR. R. FINDLAY.
Appointed Keeper of the Royal Horticultural
Society's Garden at Wisley.

23rd, but he is nevertheless determined that no effort shall be lacking on his part to attain that ideal. Mr. Findlay's work as Superintendent of Greenwich Park is before the public, and has been very greatly admired by those competent to judge. This position he has occupied under His Majesty's Board of Works for about two years. A native of Kincardineshire, Mr. Findlay was born on the Brotherton Castle estate, where his father has been head gamekeeper for half a century. The son, however, preferred gardening to gamekeeping, and served his apprenticeship in the gardens of Old Montrose House. He served for various periods at Park Hall, Stirlingshire; Newbyth House, East Lothian; Brotherton Castle, Kincardineshire; and Newton Don House, Kelso. In 1902 to 1904 he became general foreman in the Earl of Minto's establishment at Minto House, Hawick, and his first appointment as head gardener was with Mrs. Watson Kennedy at Wiverton Hall, Cley-next-Sea, Norfolk, whose gardens and grounds were designed and laid out during his period of service. From 1908 to 1919 he was gardener to A. K. McDouall, Esq., at the famous Logan Gardens, Ardwell, Wigtonshire, and during his period of service there the gardens were entirely renovated. As many of our readers are aware, Mr. McDouall has an unusually fine collection of plants that are regarded as tender in many parts of the country. An additional interest was lent to Mr. Findlay's period of service by the raising of seedlings from seeds sent home by such well-known

collectors as Mr. E. H. Wilson, the late Mr. Reginald Farrer, and Mr. George Forrest. In 1919 Mr. Findlay was appointed gardener to the Rt. Hon. Earl of Stair, and had charge of the gardens at Castle Kennedy, another establishment famous over a long period for fine displays and high cultivation. During part of the war period Mr. Findlay served with His Majesty's Forces in France in the First City of London Field Artillery. His appointment to Greenwich took place in May, 1923. It will be seen that Mr. Findlay's experience is a wide one; he is in the prime of life and we offer him our congratulations on securing this important position in which we wish him every possible success.

Wild Onions.—The authorities of the University Farm, Cambridge, have decided to undertake experiments in the eradication of the Wild Onion, a troublesome pest on some fields on heavy clay land. They hope by this means to arrive at an economic method of eliminating it. The importance of gaining the benefit of farmers' experience and observation before designing the experiments is fully recognised, and amongst the suggestions already collected are the following:—drainage, heavy manuring with dung, a succession of fallow crops, a succession of spring planted crops, bare fallowing commencing by autumn ploughing, and tillage during frost. Mr. Alfred Amos, Director, University Farm, Cambridge, will be glad to hear from anyone having experience in eradicating troublesome plants, with the object of incorporating suggestions in the experiments.

Ormskirk Potato Trials, 1925.—The National Institute of Agricultural Botany extends an invitation to farmers, Potato growers, and merchants, and agricultural advisory and administrative officers to visit the Potato Testing Station, Ormskirk, singly, or in parties between July 20 and August 28. Visitors will be able to see the official tests of some hundreds of new varieties of Potatoes for immunity from Wart Disease. These are carried out at Ormskirk for the Ministry of Agriculture and Fisheries, which certifies the results. The other trials open to inspection include the Lord Derby Gold Medal Trials and Yield and Maturity Trials of the leading immune main crop Potatoes. There are also nearly two hundred demonstration plots of the chief varieties of British and foreign Potatoes, including the varieties certified as immune in 1923 and 1924. Hitherto the annual summer inspection of these trials has been held on a single day, but it has been suggested that visitors would be able to learn more about the trials if they came in smaller parties on different days. To see whether this is the case, the Institute will not arrange the usual inspection this year, but will be glad to receive agriculturists on dates convenient to them. Secretaries of branches of the National Farmers' Union, and others wishing to organise parties to see the trials should write to the Superintendent of Potato Trials, Potato Testing Station, Lathom, Ormskirk, Lancashire, suggesting alternative dates. Individual visitors will also be welcome, but they, too should make arrangements with the Superintendent at least a week in advance of their visit. Ormskirk is conveniently reached by a frequent service of local trains from either Liverpool or Preston.

Carnation Exhibitions.—In addition to its exhibition at the Royal Horticultural Society's Hall on Tuesday, July 14, the National Carnation and Picotee Society will hold an exhibition at the Carpenter's Hall, Throgmorton Avenue, London, on Thursday, July 16, from 12 noon to 5.30 p.m. The Lady Mayoress has kindly consented to open this exhibition in the City of London.

Lilium giganteum at Merton Hall.—Lady Edgar informs us that about two hundred plants of *Lilium giganteum* will flower at Merton Hall, Norfolk, this year, and they should be at their best during the second week in July. The nearest station is Watton,

about two miles away, while Thetford is eight miles and Brandon ten miles distant. Anyone who would like to see this fine display of the giant Lily are at liberty to visit Merton Hall, but should notify Lady Edgar of their intention of so doing. Our readers will remember that we published an illustration and account of *Lilium giganteum* at Merton Hall in our issue of September 13, 1924, p. 179.

Appointments for the Ensuing Week.—Sunday, July 5: Wakefield and North of England Tulip Society's meeting. Tuesday, July 7: Royal Agricultural Society's show at Chester (4 days); Streatham Rose and Sweet Pea Society's show; Royal Caledonian Horticultural Society's meeting. Wednesday, July 8: National Rose Society's provincial exhibition at Bath in conjunction with the Bath and District Horticultural Society's show (2 days); Brighton, Hove, and Sussex Horticultural Society's show (2 days); Sheffield Chrysanthemum Society's meeting; National Viola and Pansy Society's show. Friday, July 10: Royal Horticultural Society of Ireland Council meeting. Saturday, July 11: Windsor Rose Society's show; Newcastle and District Horticultural Mutual Improvement Society's outing.

Gardeners' Chronicle Seventy-five Years Ago.—*Rhododendrons*. It is stated by Messrs. Standish and Noble in your paper of the 15th ult., that "in the Himalaya Mountains the *Rhododendron* is invariably found growing near or on the margins of morasses." As this is put forth with a view of giving hints for the successful cultivation of *Rhododendron arboreum*, I think it worth while to mention that I have seen many thousand tree-*Rhododendrons* in the Himalayas, and I never saw one near a morass. In fact morasses are very rare in the Himalayas, and over many miles of country thickly studded with *Rhododendrons* there is not such a thing as a drop of water to be found. *Rhododendron arboreum* grows on the Himalayas in disintegrated granite, mica slate, and gneiss, without anything approaching to peat. *Rhododendron nilagiricum*, a species first indicated by Zenker, and one, I believe, generally considered distinct from *arboreum*, does in the Neelgherries grow in a thin stratum of peat, which, however, is frequently not more than six or eight inches in depth, and consequently the roots must soon pass through it into the soil below. The finest mass of *Rhododendron arboreum* I ever saw was within five hundred feet of the top of Dodotolia, a hill 10,000 feet high, in Kumaon, between Almorah and Sireenugger, on the Bhaugeruttie river, growing in company with *Quercus Kamroopii*, and just above the Deodar. Here every possible variety of colour capable of being produced by a mixture of crimson and white was to be found amongst the *Rhododendrons*; the whole side of the hill was one blaze of colour. A thirst-exciting ascent, in the middle of the day, April 23, made me search eagerly for water, which I could only find in the shape of some unmelted snow on the north side of the hill in a shady nook, till I descended at least 5,000 feet to the stream in the valley below. *William Munro, Capt., Belfast. Gard. Chron., July 6, 1850.*

Publications Received.—*Methods in Plant Histology*. By Charles J. Chamberlain. Fourth edition, revised. Cambridge University Press, Fetter Lane, E.C.4. Price 16s. 6d. *Roeding's Fruit Growers' Guide*. Geo. C. Roeding, Fresno, California, U.S.A. *Spraying Experiments against Apple Scab*. By N. B. Bagenal, W. Goodwin, E. S. Salmon and W. M. Ware. South-Eastern Agricultural College, Wye, Kent. Price 6d. *The Lorette System of Pruning*. By Louis Lorette. Translated by W. R. Dykes. Illustrated. Martin Hopkinson and Co., Ltd., 14, Henrietta Street, Covent Garden, W.C.2. Price 7s. 6d. net. *Grass Seed Mixtures*. Free on application to the University College of North Wales, Bangor.

PLANTS NEW OR NOTEWORTHY.

CALCEOLARIA PRATENSIS.

THIS interesting species (Fig. 1) was well shown by Sir William Lawrence, Bt., of Burford Lodge, Dorking, at the meeting of the Royal Horticultural Society held at Vincent Square on June 23. The seeds

how much frost it will withstand has not yet been proved. Moreover, the moist conditions of our winters coupled with spells of very cold weather may test the plant very severely, but at present we may only hope that it will in due course experience and survive such a test.

The yellow-flowered, herbaceous *Calceolaria pratensis* was found and described by Rudolf Amandus Philippi, Professor of Zoology

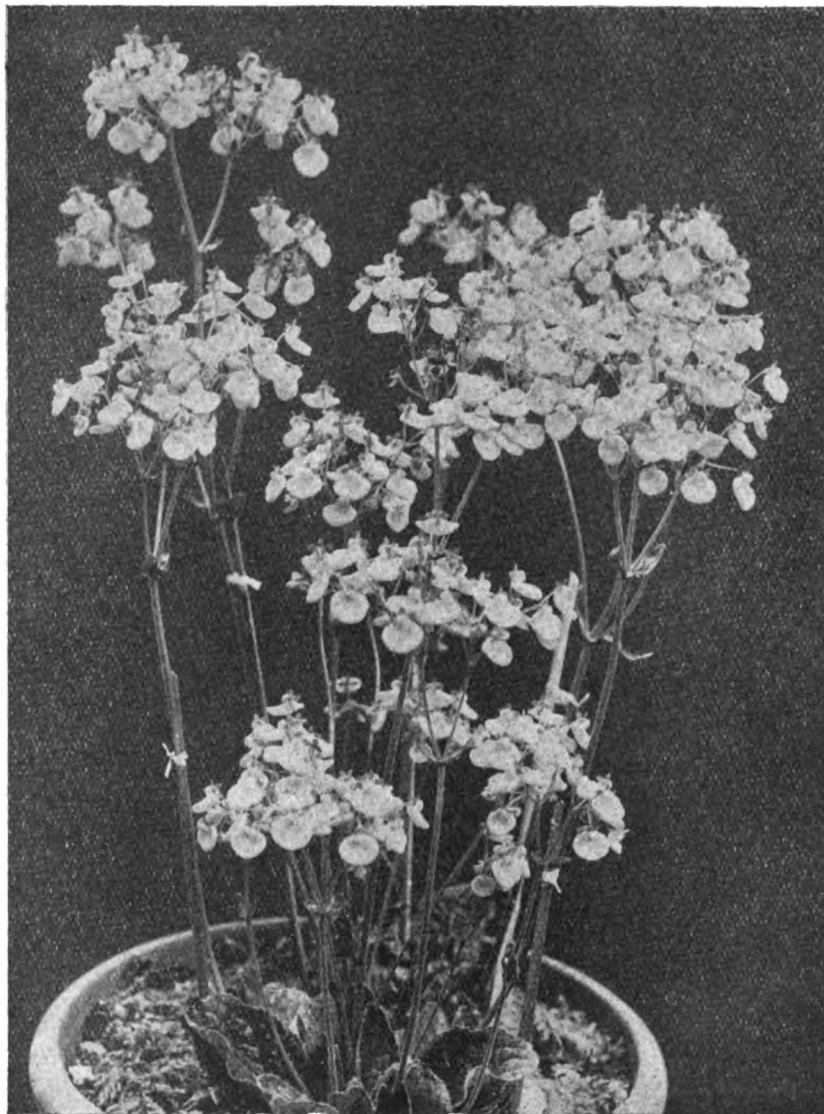


FIG. 1.—CALCEOLARIA PRATENSIS.

R.H.S. Award of Merit, June 23. A dwarf-growing herbaceous species with yellow flowers. Shown by Sir Wm. Lawrence, Bart.

from which the plants were raised were sent home by Mr. M. Goethe from the Lago Alumine district of the province of Neuquén in the Argentine Andes. They were collected early in 1924 and sown at Burford Lodge in August of the same year. The seedlings were raised under glass and pricked out in a cold frame where they remained throughout the winter and withstood from 8° to 10° of frost. Planted out in April of the present year they have been blooming freely for the past two months. It is evident that *Calceolaria pratensis* likes a moist soil and a position in full sunshine. Apparently it is hardy, but just

and Botany at the University of Santiago, where he was also Director of Museums. He appears to have travelled extensively in Chili in 1853-4, and the plants he found are described in *Linnaea*, Vol. XXIX (1857-58), 33. In his fourth Century of plants—"Plantarium novarum Chilensium"—he described fifteen species of *Calceolaria* and *C. pratensis* is one of these.

The genus *Calceolaria* is of great horticultural importance and this latest addition should prove of value because of its supposed hardy nature. The special exhibition of *Calceolarias* at Kew Gardens should be inspected by all gardeners who have the opportunity.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Vanda teres.—This and other tereta-leaved Orchids which have recently passed out of flower are rooting freely. Specimens that have become leggy from loss of the lower leaves may be cut down to a desired length, below some of the aerial roots and re-potted. The top portions may be re-potted singly or three or more stems may be placed together in pots of a suitable size, or in narrow boxes or troughs. Whichever receptacle is employed, it should be provided with plenty of clean crocks for drainage purposes. The nature of the compost used is a secondary consideration. Plenty of broken crocks intermixed with Sphagnum-moss, pressed firmly about the base of the plants, is all that is required. Plants that do not need to be cut down should have all the old materials washed from between the roots, and new afforded. Secure each plant to a neat Teak-wood stake. These species flourish in full sunshine in an extremely humid atmosphere. The roots may be well soaked so soon as the work of re-potting is finished, and the plants should be syringed daily with tepid water until growth becomes matured. Afterwards gradually reduce the amount of water and keep the compost perfectly dry during the dormant season. The lower parts of the stems from which the tops have been removed may be left in the receptacle, and if they are afforded moist conditions they will soon form new top growth, when they should be re-potted. The stock may be increased by placing portions of the stems in a bed of Sphagnum-moss or in the boxes or troughs where the plants are growing and so soon as new top growth and roots commences they may be potted and grown in the usual way. The hybrid *Aeridovanda Mundyi* should be afforded similar treatment, but is best grown in an intermediate temperature.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Propagation.—Where large collections of plants are grown, the demand for young stock is constant, and from now onwards the propagator will be busy increasing his stock of various plants by means of cuttings. Many rock and border plants strike readily at this season, and those who contemplate extensions in rockery or dry-wall planting should prepare for the stock of plants now. Such plants as *Alyssum*, *Arabis*, perennial *Candytuft*, *Aubrietias*, *Dianthus*, *Phloxes*, *Helianthemums*, *Lithospermums*, *Saxifragas*, and many others root freely if inserted in sandy soil, placed in a cold frame, and shaded from sunshine. Many plants of a similar nature may also be raised from seeds, and where earlier sowings have failed to give a sufficient supply of plants, a further sowing may still be made. Trees and shrubs which have been layered should have the soil around the layered branches kept moist and free from weeds.

Tuberous Begonias.—These plants are moisture-loving subjects and should not be allowed to suffer from lack of water. On light, sandy soils the beds will need a good soaking at least twice weekly, whilst a heavy sprinkling of the foliage every evening is of great benefit. It is not easy to use the hoe between these plants, hence a mulch of short material should be given to conserve the soil moisture. These plants have been

much improved in recent years, and up-to-date varieties are very handsome, although some object to them as being of stiff and formal appearance.

Spring Bedding.—Wallflowers, Forget-me-nots, Sweet Williams, and other plants grown as biennials for flowering next spring should be pricked off so soon as they are ready. These plants should be grown in an open position in order that they may make sturdy growth able to withstand the rigours of a severe winter. Although it is preferable to prick out the plants in showery weather, it is not wise to wait when they are ready. If the weather is hot and dry, the ground to receive them should be thoroughly watered the day before pricking them out, and the young plants may be shaded from the fierce rays of the sun by means of Spruce branches inserted in the beds at intervals.

Tree Lupins.—These fast-growing plants soon make large bushes, but their duration of life is comparatively short. Young stock should always be kept on hand, and the present is a good time to raise plants either from seeds or cuttings. When it is desired to perpetuate any special variety, the shoots taken from the base of the flowering stems will form roots readily if inserted in sandy soil and placed under a bell glass. Tree Lupins are very floriferous and are adaptable for various positions in the flower garden.

Antirrhinums.—A sowing made now will supply plants for flowering early next year. The seeds should be sown thinly, and when grown in this way the seedlings may be transferred direct to the position where they are to flower when ready. Remove the faded flowers and seed pods so soon as the latter form, as this will throw strength into the plants, enabling them to provide a better succession of flowers, and to make finer specimens for blooming a second year.

PLANTS UNDER GLASS

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Routine Work.—A long spell of hot, dry weather such as we have experienced during the past few weeks, increased to such an extent the demands upon available labour, that a falling behind in routine work is almost inevitable. Given proper attention in watering, plants grow rapidly and are in danger of suffering for want of potting on. When delay in these essential operations is unavoidable the effect of a check to the plants may be minimised by a judicious feeding of the roots until the potting operations can be undertaken. Weak liquid manure may be applied often, taking care that it is never administered direct to any very dry plant, but after a first watering with clear water only. Or a course of soot water applied throughout a whole week is safe treatment.

Cyclamen.—The final potting of the autumn-raised seedlings should be given with as little delay as possible from now. A good medium, fibrous loam is essential to the growing of good Cyclamens, and it should have been stacked long enough to allow for the partial decomposition of the vegetable fibre. If this latter property be lacking, then it will be wise to sift out the finer particles of soil, retaining all the fibrous part. Two-thirds of loam to one-third good Oak-leaf mould, with a free addition of crushed old mortar rubble, some fine grade oyster shell and coarse silver or river sand will provide a suitable compost. Pots five-and-a-half inches in diameter should be large enough, except for the largest and strongest-growing plants, which may be afforded six-inch receptacles. These should be clean and well drained. The plants should be potted firmly, taking care not to place the corms low down in the pot, but merely just covering the old balls with the new soil. If thrips should have attacked

the plant dip them in a safe solution of some reliable insecticide before potting them. They should always be shaded from strong sunshine, and after potting be kept rather close for a time until they have recovered from the check of re-potting, and be frequently syringed with soft water.

Euphorbia pulcherrima (Poinsettia).—The one-year-old plants from which young stock has been raised by cuttings are well worth growing on a second year to augment next winter's supply of flowering plants. The young growths at the base of the cut-back plants may be reduced to two or three in number; the old soil should be partly shaken from the roots and the plants be repotted in receptacles one size smaller than those in which they have been wintered. They should be grown on for a time in a moist, warm temperature in a position near to the roof-glass, and, later, shifted into larger pots, and afforded the same treatment as the young plants. To ensure the formation of large bracts on the plants in winter, Poinsettias should be grown during late summer under cool, airy conditions. I have known some successful growers to place their plants outside during August, when the weather has been really warm.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Strawberries for Forcing.—Where a special batch of Strawberries has been grown for the production of early runners, the latter are now in a good condition for layering into three-inch pots for forcing purposes. Select the finest crowns and place one in the centre of each pot containing a compost of three parts good loam, one part decayed manure, one part silver sand, and a sprinkling of soot. Make the soil firm and stand the pots level and close together, leaving sufficient room to walk between the rows for watering. A stone placed close to the young plant is better than a peg for holding it in position until it is rooted. Go over the pots twice a day for watering, and spray the runners during hot weather in the evenings. Royal Sovereign is still one of the very best varieties for forcing.

Melons.—The fruits of the second batch of Melons will now ripen quickly and the plants will require constant attention. Admit a current of air through the house so soon as the fruits commence to colour and afford less water at the roots. Watch that the fruit does not break away from the stem; certain varieties are much more liable to do this than others, and the fruits of these should be cut on the first signs of cracking around the stem. Have plenty of good, strong plants ready for planting a successional batch when the above crop is finished. No time should be lost with this batch owing to shortening days and cooler conditions. It will be advisable to grow free setting varieties with strong constitutions. The shoots of plants growing in frames need to be kept well regulated, and the roots given copious supplies of water during the swelling of the fruit. Canteloupe varieties will require a trifle more ventilation. See that the fruits are raised on pots above the foliage; they can then be carefully watched and attended to.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Strawberry Runners.—In layering the runners select them from strong, robust plants, cutting away all weak runners and taking care to see that the variety is true to name. The pots should be prepared in readiness, large sixties being a most useful size. For soil, use good loam mixed with

a little wood ash at the rate of one barrow load of wood ash to seven of loam. The mixture should be turned two or three times. Place one piece of broken pot over the hole of the pot, which should be filled full of soil. Place the pot firmly in the ground then arrange the runner on top and press it into the soil firmly, leaving the crown exposed. Give the runners a good watering to settle them in; watering must not be neglected in any case. All runners beyond the pots should be detached. After about a fortnight or so examine the pots to see if the runners are rooting firmly, and when they have made sufficient roots sever them from the old plants and stand them on an ash base for a week or so, when they will be established sufficiently to be planted in their permanent quarters.

Hardy Vines.—Outdoor Vines require attention in regulating the young growths, not allowing them to ramble beyond their allotted spaces. The laterals should be pinched to one or two buds as may be required, whether for fruiting or as an ornamental covering. If red spider appears the vines should be syringed early in the evenings of hot, sunny days, but if the nights are chilly defer the syringing until the morning and then syringe very heavily.

Black Currants.—Cuttings of Black Currants may be inserted at any time from now onwards through the present month, choosing shoots from the sunny side of the plants. Make the cuttings six inches long, cutting the base square close to the bottom bud. Rub off the lower buds, leaving about three or four above the soil. If a cold frame is not available insert them in the open ground in light soil and make them very firm. Place boards along the sides to form a frame and put a small glass light on the top or squares of glass to keep them close. Syringe the cuttings on sunny days and shade them until they can withstand exposure to full sunshine without flagging.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Runner Beans.—These plants are growing fast and should be mulched without delay. Copious supplies of water, given preferably in the evenings, will materially benefit the crop; also the free use of the syringe in the evenings will be found very beneficial to the plants both in assisting growth and also the setting of the beans. Black fly may have made an appearance in the young, growing tips; if such is the case give the plants a good spraying or two with Quassia extract.

Turnips.—A liberal sowing of Turnips should be made on ground from which early Potatoes have been lifted. If the soil is dry thoroughly soak the drills a few hours before sowing the seeds, as this will assist germination. So soon as the seedlings are large enough to handle they should be thinned. Keep the ground regularly hoed between the drills and water the crop thoroughly when moisture is necessary. This sowing will provide Turnips over a late period.

Spinach Beet.—A sowing of Spinach Beet should be made in drills about fifteen inches apart. Thin the plants when they are large enough to twelve inches apart in the rows. No garden should be without a liberal quantity of this vegetable as it will withstand practically any weather and always forms a welcome change for use in winter.

Globe Artichokes.—As Globe Artichokes attain a useable size they should be cut and used or bottled. The plants are gross feeders and should be fed liberally and kept well watered during dry weather so as to keep up a supply of nice young, succulent heads for so long a period as possible.

Corn Salad.—It is advisable to sow a batch of Corn Salad which will furnish a green salad for the winter, and will serve as a welcome change to other green salads. It is best served at the table in conjunction with young Beetroot.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

The Rock Garden.—The soil in the rock garden should be stirred continually with a

Specimen Bedding Plants.—The watering of standard Heliotropes, Humeas, etc., that have been removed from large pots and placed in beds will be frequently necessary if present conditions prevail. Carefully draw back the soil from the stem to form a saucer and well water each plant in turn. The soil may then be replaced.

Mustard and Cress.—To maintain continuous supplies of fresh Mustard and Cress during hot weather, sowings will require to be made frequently. Choose a shady spot under Black Currant bushes, well fork the

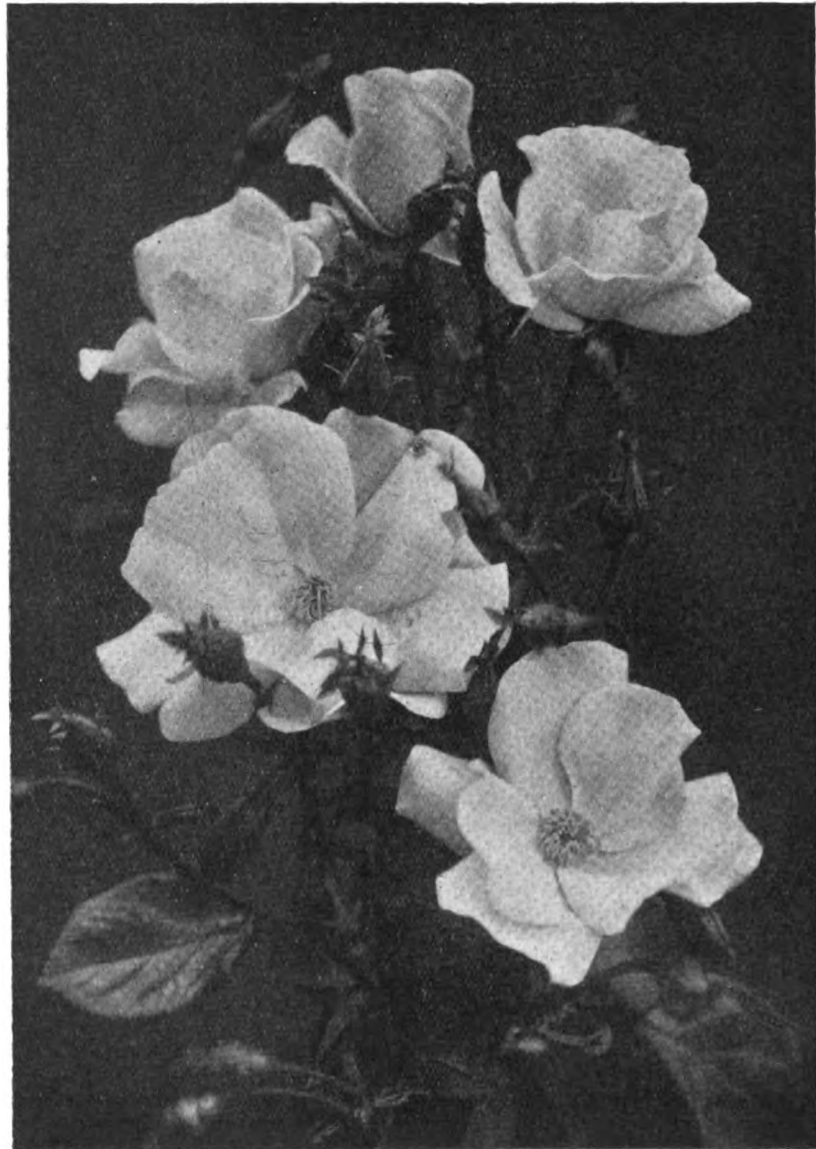


FIG. 2.—ROSE ELSE POULSEN.

R.H.S. Award of Merit, June 23. A pink single-flowered Polyantha variety. Shown by Messrs. D. Prior and Sons.

hand fork in dry weather, removing all weeds. Many alpine are showing signs of suffering from drought and watering has become necessary; this is best done late in the afternoons. Repeated waterings will be found necessary where the slope is steep and the position exposed to full sun. Good cuttings may be obtained for propagation later in the case of Aubrietias and Helianthemums by sacrificing a plant, half cutting it back now; this will produce young growths very suitable for propagating in August. Any seeds required should be carefully removed from the plants, labelled, and placed under glass in cold frames on sheets of paper until they are sufficiently ripe to store.

ground, then tread it firmly. Make the surface level and fine with the rake and water the soil thoroughly before sowing the seeds. Cover the latter with a hand-light and shade the hand-light until the seeds have germinated.

Celery.—The planting of Celery should be brought to a close for Celery planted later seldom matures. Previous plantations must be kept well supplied with water. Should the soil round the plants become caked break it up with a hoe. The earliest plants may now be given weak liquid manure once a week, increasing the strength of this stimulant as the plants become established.

IRIS GARDEN.

TALL-BEARDED IRISES.

THE several exhibits of Tall-Bearded Irises at the exhibition of the Royal Horticultural Society on June 9 and 10 gave evidence that the popularity of these lovely flowers is rapidly increasing. Few other hardy flowers can compare with them in either colour combination or ease of culture, for they may be grown equally well by the amateur as by the professional. They make town and suburban gardens gay during May and June, and all are perfectly hardy and not fastidious as to soil. These Irises make a glorious show when planted among shrubs, on mounds or slopes by the side of lakes, and in the herbaceous border. Five important facts to bear in mind for their successful cultivation are:—(1) Plant firmly and early, so soon after flowering as is possible; (2) they revel in full sun; (3) they need a dryish or well-drained soil; (4) if lime is deficient add a little of this material when digging the ground, and use chalk on light soils; (5) guard against using fresh manure before planting.

Varieties of outstanding merit are:—Ambassadeur, large flowers, of a smoky, reddish-violet shade, a robust grower; Crimson Glow, a flower of perfect shape, coloured rich, crimson-rose—the standards are prettily incurved; Marjorie Tinley, undoubtedly the finest and largest of the pallida section, with soft, lavender standards and darker falls; Mrs. Marian Cran, having tall, stately stems and flowers with rose-tinted standards and falls, a very handsome variety; Mestor, one of the finest of the deep purple varieties, having broad, incurved standards of a rich, violet-blue, and velvety-purple falls; Olive Murrell, an interesting variety, with a combination of lavender, rose, and shot bronze; of tall and stately habit; Pioneer, of bold and vigorous habit, the flowers large, with standards prettily incurved and of a reddish-purple colour. The falls are broad and of a bright, red-purple; a very handsome Iris. George Yeld, stout, branching spikes, and flowers with apricot standards and rosy-crimson falls, slightly edged chrome; Flamenschwert, superseding "Iris King," having larger and brighter flowers; Lady Sackville, one of the most beautiful of these Irises, having broad, large standards, prettily incurved, of a silvery-blue tone, and falls of rich, velvety, violet-purple, set off by a conspicuous, orange beard; Belladonna, the flowers are of medium size, which add considerably to the general effect for border decoration and for cutting; they are freely produced and very handsome, being a delightful shade of rich, China-blue, with a pronounced aroma of Black Currants; Lord Lambourne, a typical Iris, and one that should be included in all collections. The flowers are large, with a colour combination of rosy-fawn, bronze, and rich crimson.

The following may be placed in juxtaposition with the above, all being outstanding varieties, and worthy of inclusion in collections, having some diverse characteristic in colour combination, size, or habit:—

Purples, and Blue Shades.—Benrimo, E. A. Bowles, Lady Chas. Allom, Pegasus, Hadabra, Medrano, Oriflamme, Conquistador, Eden Philpotts, and Lent A. Williamson.

Yellow, Gold and Bronze Shades.—Mrs. H. F. Bowles, King of Iris, Lady Hillingdon, Mithras, Nibelungen, Sherwin Wright, Shekinah, and Mrs. Neubronner.

Rosy-crimson Shades.—Troades, Ruby Perry, Mrs. Fred. Stern, Batulus, Abenda, Feronia, Mrs. W. Cuthbertson, Georgina Tinley, Edward Michael, Franklin Beynon, and Prosper Langier.

White and White-frilled.—White Queen, White Knight, Silver Queen, La Neige, Mrs. Reuthe, Madame Chereau, and Ma Cherie.

Rosy-Violet and Bronze Shades.—Cassandra,

Deucalion, Alcazar, Mrs. Hetty Matson, and Helvetia.

Silvery-Blue Shades.—Dejah, Lady Foster, Lord of June, Mdle. Schwartz, Luna, Duke of York, and Nemoralia. W. Logan.

BULB GARDEN.

CAMASSIAS.

MR. LOGAN wrote on page 433, "The Camassias are an attractive feature in the garden during May and June." His experience may be different from mine, but I would have written "ought to be an attractive feature." Very few people who come to me know them, and a near neighbour to whom I gave a mixed lot last autumn told me only the last time I saw him that he had not met any of his friends who knew them. I mention my friend, for he is trying the experiment of growing them in grass. One swallow does not make a summer; so their free-flowering look of contentment with their novel quarters this year does not proclaim them to be satisfactory in grass. I do not see any reason why they should not do well, for bulbs in my garden have remained undisturbed and have flourished for considerably more than Mr. Logan's allowance of "three or four years." Should this meet the eye of anyone who has grown them in grass "à la Daffodils" for more than one year, would they give their experiences? Are they rabbit-proof?

The nomenclature of Camassias is in a state of unstable equilibrium, but I have always thought the typical *Leichtlini* to be a creamy-white. In my collection all that came to me under the name of *Leichtlini* and something else (e.g. *alba*, *Violet Queen*, etc., etc.), have pale flowers, but I do not guarantee either their botanical or garden exactitude. I only know by far the best white bears the name of *Camassia Leichtlini alba*. Joseph Jacob.

HARDY FLOWER BORDER.

ERIGERON SPECIOSUS SEMI-PLENUS.

THE *Erigerons* constitute a very effective genus of hardy border plants with Aster-like flowers and are well adapted for grouping in herbaceous borders for effect, or planting in nursery beds to provide cut flowers for house decoration.

The variety *E. s. semi-plenus* is well worth a prominent position in gardens on account of its freedom in providing its large, semi-double soft lavender-blue flowers, on stout branching stems, two-and-a-half feet tall.

Another variety of equal merit is *E. B. Ladhams*, the flowers of which are large and of a delightful shade of clear pink, with a conspicuous orange centre; this variety grows two feet tall.

Erigeron Eelsii is of much dwarfer stature with large, rose-pink flowers with a brownish disc; one of the most continuous blooming *Erigerons* and a gem for the rockery. The *Erigerons* may be increased by division. W. L.

PENTSTEMON OVATUS.

INTRODUCED into this country so long ago as 1826, *Pentstemon ovatus* is not common in gardens, although it is an attractive plant. Its beauty is most apparent when grown in bold masses, and this may be carried out with advantage on the higher parts of the rock garden or in the hardy flower border.

The plant grows to a height of about four feet, the flowers being produced during

June and July: these latter are purplish-blue, of a pleasing shade, somewhat clustered and individually small; the corolla tube is scarcely enlarged; the sterile filament is bearded at its apex.

The leaves are ovate or ovate-lanceolate, the stem being somewhat sparsely furnished with foliage; the stem itself is reddish-brown, and the veining of the leaves is well-defined in this colour.

It is advisable to maintain a stock of this hardy herbaceous perennial in frames during the winter, for, like some of its congeners, *P. ovatus* is liable to succumb to excessive damp.

A deep loam, enriched with leaf-mould and well-rotted manure, in an open and sunny position, will suit this plant. The flowers are fairly persistent. This useful *Pentstemon* may be propagated from seeds or cuttings. R. E. Arnold.

ORCHID NOTES AND GLEANINGS.

THE CHARM OF ORCHID FLOWERS.

NEARING eighty-four years and with over seventy of that number spent among Orchids of all classes and their growers, I have always thought that, apart from their other claims to notice, there must be some special point which acts as a centre of attraction to observers of all classes, whether they understand Orchids or not, compelling attention to these flowers to a greater degree than do the beauties of the more regular flowers, all of which, however, are worthy of the interest taken in them.

Orchids have a special attraction to insects, which, while pursuing their search for food from the flowers, aid in the fertilisation and reproduction of species which might otherwise die out in their native habitats.

The striking feature in Orchids, large and small, is to be found in the labellum, or odd petal, and without it, or when it is substituted by a segment similar to the other petals, the compelling attraction disappears and the inflorescence becomes less showy than in other flowers.

Take for example a selection of flowers of the *Cattleya labiata* section and remove the lip; when this is done the flowers are much alike and not very attractive. Replace the lip with an ordinary petal and the result is much the same. Examples of regular peloria in Orchids, some of which have been illustrated in *The Gardeners' Chronicle*, with the lip reverting to the three more or less equal petals, show the generally unattractive character of such abnormal flowers, unless in the change the colour of the lip passes to the other petals, as in *Cattleya intermedia* Aquinii, which not only has the colour of the lip developed in all the petals, but transmits this feature to some of its hybrids.

A remarkable instance of a batch of *Cattleya Mendelii* being imported which, to the disgust of the purchasers, rarely produced a flower with a normally coloured labellum, is well known. In this case the development of peloric flowers, without a lip, had become a fixed character of the plant in its native habitat. But occasionally a natural flower with a magnificently coloured lip was produced. The theory is that the particular insect concerned with the pollinating of this Orchid had almost died out, and consequently the labellum, being unwanted, also failed, but appeared at wide intervals to be available if opportunity offered. In nature, through long periods of time, this may well have happened.

In the smaller and less showy species, and those sometimes called botanical, the attraction is still the labellum. The little feather-tipped *Bulbophyllum barbigerum* and others of its

class always command attention. If the labellums were removed the interest would fail more than by the removal of any one other segment of the flower.

Some Orchids, in which the outer segments are well displayed, and the lip is the smallest of the floral parts, might be thought to be exceptions, but the lip makes up for its smallness with the generally showy yellow crest and bright colours around it. Of this class are many of the *Odontoglossums*, including the forms of *O. crispum*, but here again the crest and base of the lip are the attraction.

In some species, in which the labellums are hidden or enclosed, insects are attracted (as in *Cryptophoranthus* and some *Masdevallias*) by the ornate decoration of the outer side of the other segments.

In these days hybrid Orchids are paramount, nevertheless it is the finely formed and richly coloured lip that the hybridist mainly strives for, and this feature gives him an immense advantage over the raisers of other classes of flowers.

Even to the Orchid Committee the attraction of the labellum is the great feature. I have often heard the remark at the table when a fairly showy hybrid has been examined, "It promised to be a good thing, but the lip is very poor!" One of the great objects of the hybridist is to enlarge and improve the labellum or other defective segments, and to attain a high standard of floral beauty, which in numerous cases they have been successful in bringing about. J. O'B.

ALPINE GARDEN.

PRATIA REPENS.

THIS pretty little plant is attractive in the rock garden, and is, apparently, revelling in the sunshine and dry conditions. The flowers are white, suffused with mauve or violet, and over half-an-inch in length; the peduncles are rather long, and one-flowered. The fresh appearance of the petiolate reniform leaves is not the least of the plant's attractions.

It was introduced from the Falkland Islands, and is an ideal plant for growing in sunny, hot positions at the base of rocks.

The *Pratias* are very near to *Lobelia*, the chief difference being in the fruit, which is a globose or obovoid berry, whereas the *Lobelia* possesses a dry capsule.

A widely-spread genus, about fifteen species have been in cultivation from time to time, the best known, in addition to the one under notice, being *P. angulata* and *P. begonifolia*; Tropical Asia, Australia, New Zealand, and South America, are the far-apart habitats of these charming plants, which may be propagated from cuttings or seeds. Ralph E. Arnold.

CODONOPSIS.

CODONOPSIS OVATA COOPER'S VARIETY is a unique plant for deep, sandy soils on the rockery. At the present moment I have this charming Chinese species growing on the rockery eighteen inches above the ground level; some are where the graceful, trailing or drooping growth hangs over the surface, displaying the most beautiful soft china-blue, bell-shaped, prettily veined flowers to advantage. The real beauty, however, lies in the white and orange bead-like drops in the centre or base of the flowers. This plant should be grown on the sunny rockery in a deep, sandy loam, in which conditions it will revel. W. L.

OURISIA COCCINEA.

In the interesting "Garden Notes from South-west Scotland," on page 430, Sir Herbert Maxwell gives his experience with

Ourisia coccinea. In my earlier days I felt it comparatively easy to come to some definite conclusions regarding its treatment, but, alas! *experientia docet*, and one feels utterly baffled in arriving at anything definite regarding this fine plant—for fine it really is when it flowers well. And how true this is with regard to many other plants!

I first made the acquaintance of *O. coccinea* in full flower in a garden where it was growing by the side of a grass path in damp, rather peaty soil and in almost total shade. That must be forty years ago, and since then I have seen it grown in many places; in some with perfect success, and in others with none at all. The owner of the garden just mentioned was not content with having the *Ourisia* in one place in the garden, but transferred pieces to other parts, some, apparently, with conditions exactly like that in which the plant was flourishing, but, strangely enough, he never succeeded with it so well in these, and the original patch remained supreme.

In my own garden I have tried it and have succeeded best with it in a moist, rather shaded place, but have never had so many flowers in proportion as my friend had.

I can only recall one garden, and that in the Green Isle where *O. coccinea* surpassed his, and that was in one where there was lime in the soil, and there it flourished in sun, but in rich, rather moist soil. I hope Sir Herbert Maxwell's interesting remarks will direct renewed attention to the subject, although I fear from what he states we can lay down no definite rule as to sun or shade. Even if we successfully adopt either condition I fear we cannot say the same will answer in another garden.

ARENARIA BALEARICA.

WEED-LIKE to the careless, especially when out of bloom, the Balearic Sandwort, *Arenaria balearica*, is yet one of the gems which delight the heart of the flower-lover and cause him or her the keenest joy in viewing its fascinations. It is not one which dazzles the eye or obtrudes itself upon the passer-by with monstrous flowers or noble habit. It is unassuming as it creeps along the surface of the rocks and then spangles its little leaves with miniature white flowers. It has nothing striking about it, yet it finds its way into the affections of many who know how and where to treat it. It has its failings, like most other plants, yet *A. balearica* has a rôle of its own to fill, and one, too, in which it has hardly any understudy to take its place.

In most places it forms on the stones a veil of tiny leaves, whence arise hosts of lovely, miniature flowers. It delights, for example, to cover the moist, shady side of a sandstone rock, but it does not enjoy a dry one in full sun. I remember once planting it on low walls on either side of a path.

One side of the wall was in full sun, the other was shaded. On the former it grew, but was evidently unhappy, while on the other it thrived, quickly spread, and flowered well. But it must not be allowed to thrust itself among choice plants, which it might choke. I once saw it planted against a wall where *Ramondias* were growing in the chinks. Left uncured, the Sandwort found its way among the crowns of the *Ramondias* and prevented the central leaves and flowers from developing, with disaster to the plants in the end. In some hardy Ferneries, also, where the moist and shady conditions appear to suit it, I have seen *A. balearica* running riot over rocks and among the Ferns, to the great detriment of the latter. Yet this Balearic Sandwort is worthy of the consideration of the many.

It is hardy, clings as closely as a Lichen with its shoots and leaves, and then scatters all over this veil a galaxy of its lovely, little, white stars. S. Arnott.

TREES AND SHRUBS.

LONICERA TRAGOPHYLLA.

THIS fine species of Honeysuckle, introduced by Messrs. J. Veitch and Sons, was originally discovered by Dr. A. Henry, but collected by Mr. E. H. Wilson in 1900. Probably the largest-flowered member of the *Periclymenum* group of the genus, it is certainly one of the most showy, as it bears its large, yellow flowers in heads of from ten to twenty. *L. tragophylla*—which forms the subject of the Supplementary Plate accompanying this issue—is a strong grower if planted in deep and fairly moist loam; it appears to love sunshine when it has made considerable growth, but would seem to like a modest amount of shade about its roots and the lower parts of the stems. As the illustration shows, it will grow to a considerable height and when it has reached a goodly size and flowers freely it is most effective as well as graceful.

Mr. Wilson found *Lonicera tragophylla* in the Chinese province of Hupeh, climbing over banks on the mountain sides at an altitude of 4,000 to 7,000 feet, and he stated that the Chinese popular name for the species was Ta-chin-yin-hua, or the Great Gold and Silver Flower. A figure of flowers of this species, from a drawing by the late Mr. Worthington G. Smith, was issued as a Supplementary Plate in *The Gardeners' Chronicle*, of August 27, 1904. In the present issue a fine specimen of a growing plant is illustrated.

CEANOTHUS.

THE genus *Ceanothus* includes some of the most useful of our ornamental flowering shrubs, for the various members blossom in the summer-time, when most other flowering trees and shrubs are over. An ideal position in which to plant them is on a wall facing south or west, and here, provided good soil and proper attention are given, no shrubby plant will give a finer effect.

The hybrid *Gloire de Versailles* is a rapid grower compared with some of the others, which are more suited to be grown as isolated specimens in the shrubbery.

A group of this *Ceanothus* on a lawn is very effective, or it may be interspersed with other shrubs, such as *Tamarix aestivalis* or *Spiraea Douglasii*, or, again, it may be used for planting in the foreground with *Spiraea discolor* (syn. *ariaefolia*) at the back of it, or it may be mixed with this *Spiraea*, training the latter up poles and pruning the old wood out every year to keep it within bounds.

C. Gloire de Versailles is a hybrid of *C. azureus*, and there are other varieties in different colours from the same source and with much the same habit of growth, but they are not all so hardy or adaptable for planting in a variety of positions. The flowers are of different colours, such as *Ceres* and *Marie Simon*, soft rose; *Lucie Moser* and *Gloire de Plantieres*, deep sky blue.

Some of the species of *Ceanothus* are of a stiff, shrubby habit, and these are nearly all good garden plants when well established; some, such as *C. rigidus* and *C. Veitchianus* flower in April and May, and possibly again in autumn. *C. Brilliant* and *C. dentatus* are also desirable plants; all these may be grown against a wall if desired, but they are more effective grown as shrubs in the border. These plants require very little pruning, just sufficient to prevent them from becoming straggly. The pale lavender blue of *C. Gloire de Versailles* shows conspicuously against a wall, be it red brick or stone. This hybrid appears to be quite immune to insect attacks or fungous diseases. Cut sprays of it are very pretty mixed with long-stemmed *Roses* or other flowers. R. W. Thatcher, Carlton Park Gardens, Market Harborough.

NOTES FROM WISLEY.

It is noticeable that many plants grown as improved varieties of some herbaceous subject differ very little, if at all, from the original type. For example, it is often difficult to discern any difference between *Achusa italica* and *Achusa* "Dropmore" variety as seen in some gardens, perhaps on account of bad cultivation or, more probably, through raising the plants from seeds. There is no doubt, however, that this variety, as first introduced, was a distinct one. The original form is now to be seen at Wisley, and the flowers are much larger and of a more brilliant blue than those of the type.

Blue flowers are very much in evidence at the present time in the R.H.S. gardens, and mention must be made of *Cynoglossum amabile*, of which there are some large

Favourite, which has blush flowers with a broad, crimson zone, and a compact-growing, double-white one named Ruth Fisher.

The pools and ponds at Wisley are now at their best, for, in addition to masses of Irises and water-side flowers on the banks, there are numbers of different hued Water Lilies in bloom on the water (Fig. 3). Of all the plants round the ponds *Iris Kaempferi* is now the most showy. It is represented by a large number of flowers, in great variety, on the banks of the rock-garden ponds and on those of the ponds on the edge of the wild garden, known as the "round ponds." Among the Irises, plants such as *Mimulus luteus* Langsdorffii and Ragged Robin are flowering, which add greatly to the general effect.

At the back of the herbaceous borders are some pretty hybrids of *Iris chrysographes*, which is deep violet with golden stripings, and *I. Forrestii*, which is yellow. Many of

Deutzia and *Philadelphus* are also in bloom here, and the prolific flowering of *Pyracanthus*, such as *P. Rogersiana*, *P. Rogersiana aurantiaca*, and *P. crenulata* augurs well for a brilliant winter display of berries.

At the far end of the field garden a double-flowered *Rosa multiflora*, introduced by the late Reginald Farrer is flowering wonderfully well. It runs up to a height of about twelve-feet, and stretches for over fifteen-feet along a tall hedge. In the wild garden over one-hundred plants of *Lilium giganteum* are coming into flower. This species, although reaching a height of ten-feet to twelve-feet, is not particularly graceful, owing to the thickness of its stems, which are sometimes so much as three-inches in diameter at the base. The malodorous *Lilium Szovitzianum* is also flowering in the wild garden in



FIG. 3.—WATER LILIES AT WISLEY.

patches. The white and pink forms which sometimes occur are very inferior to the blue ones. In addition to this, the *Delphiniums* in the trials are now flowering; the plants are now in their second year. Many well-known varieties are represented, and are holding their own against the newer introductions. Among the double sorts, the tall, tapering spikes of *Corry*, with purple and blue flowers, are conspicuous, as are the mauve ones of *Mrs. Colin McIver*. Among the early, single-flowered varieties, *Persimmon*, *Mrs. Brunton*, and *Mrs. Thompson* are each displaying their particular shade of bright blue. A very pale, blue-flowered variety is *Captivant*; another is *Nassau*, with flowers somewhat marred by dark spots on the petals. A particularly clear shade of light blue is seen in the flowers of *Constance*, which have a white centre.

Adjoining the trial of *Delphiniums* is a trial of garden *Pinks* which are now coming into bloom. Attractive varieties include

the resulting hybrids (Fig. 4) are very interesting, both in colour and markings.

Many fine Water Lilies are in flower in the rock-garden ponds. In the smaller pools the deep-crimson *Nymphaea Froebellii* is flourishing, while in the larger ones the rose-pink *N. Ellisiana* and *N. Mansanillo* are in bloom. In the round ponds, where the water is deeper, there are many varieties of *N. Marliacea*, such as the handsome *N. M. albida* and the delicate pink *N. M. carnea*. *Nymphaeas* also thrive in the large, new pond in the field garden, particularly *N. Gladstoniana*, in spite of the fact that they are, in some cases, growing in more than four-feet of water. Many uncommon shrubs are planted in the neighbourhood of this pond, among which is *Hedysarum multijugum*, a hardy, Leguminous shrub with purplish-pink flowers. It belongs to the same genus as the French Honey-suckle (*H. coronarium*), and is worthy of wider cultivation. Several new species of

company with *Zenobia pulverulenta*, with its large, wax-like bells and glaucous foliage. The *Rhododendrons* are nearly over, an exception, however, is *R. × Gowenianum*, with bluish, scented flowers.

The plants in the alpine house have been re-arranged and, in many cases, repotted. A group of the close-growing Corsican *Erodium* is flowering, among which are several forms of *E. chamaedryoides*, or *Reichardii*, and the handsome, pink *Erodium corsicum*, named *carmineum*. Other plants of interest in this house are *Conandron ramondiioides*, a tuberous-rooted native of Japanese mountains, bearing purplish-blue flowers; and *Saxifraga tellimoides*, which throws up handsome, peltate leaves. The flowers are greenish, but not unattractive when viewed closely.

In the vegetable quarters a trial of early Peas, of which some two-hundred-and-fifty stocks were sent in, has just been judged. *J. E. G. White*.

NOTICES OF BOOKS.

Methods in Plant Histology*

THE excellence of Prof. Chamberlain's book has long been recognised, and the fact that the work is now in its fourth edition is in itself a guarantee that it has proved indispensable to all students of the minute anatomy of plants. Prof. Chamberlain's book has the great merit that it does not attempt to cite the almost innumerable alternative methods which have been used for preparing and staining objects for microscopic study. He proves all things and holds fast to that which is good. Hence it is that beginners who work without a teacher, as well as more advanced students who have the advantage of laboratory instruction, will find Prof. Chamberlain's manual a sure and trusty friend.

Gardeners who may have no opportunity for microscopic studies will yet find in these pages useful hints. For example, on p. 263, a method is given of raising Fern prothallia which is as simple as it is efficacious. A clean, well-soaked flower pot filled with wet Sphagnum moss is inverted over a pan containing water. The spores are sown on the sides and upturned base of the pot, and a bell jar or cloche is inverted over the pot. Kept in a saturated atmosphere the spores germinate and produce fertile prothallia in the course of a few weeks.

Now that the minute anatomy of plants is playing such an important part in elucidating phenomena of heredity, cytology has become a subject of importance to all who are interested in species or in hybridisation, and although the technique required to investigate the minute structure of plants is not acquired without considerable pains, nevertheless it is worth the expenditure of studious hours by any young gardener who aspires to high rank in his profession.

Once the gardener understands that no amount of scientific knowledge will dispense him from a sound and profound knowledge of the art of growing plants, there is no reason why he should not acquire all the scientific knowledge possible—for surely that knowledge will help to equip him yet better for his life work. With Prof. Chamberlain to guide him, and a friendly expert to put him in the way of using a microscope, any young gardener might spend many happy winter hours in learning something of the marvellous details on which the architecture of plants depends.

Vegetable Growing.

DURING the war almost everyone in this country, women included, who were not actively engaged in the clash of arms, were engaged in the cultivation of vegetables. The great pleasure as well as profit to be obtained from cultivating the ground and raising crops was realised by this army of amateur gardeners for the first time and many still retain their interest in horticulture. To those who raise their own vegetables, and especially those of the public who have been fortunate enough to acquire a permanent allotment, Mr. George Garner's excellent little book on vegetable growing† will be an excellent investment for the small sum of 2s. 6d. He deals with almost all the vegetable crops grown in this country, and he has given in a concise form the principal points to be observed in growing the various kinds.

The first chapters deal with the preparation of the soil, rotation of crops and frame and hot-bed cultivation of vegetables, and then follows the chapters on the various vegetables in alphabetical order. His article on the rotation of crops will be especially useful to those who have not acquired their knowledge of vegetable growing in a large

establishment, for rotation plays an important part in the cultivation of good vegetables. The author gives a calendar of operations for the various months, and it need not be emphasised how important it is to plant and sow at the proper seasons, a fortnight or even a week too late often making all the difference between success and failure.

Everyone who has gardened for a few years has always a penchant for some particular variety or varieties and in this respect it is always advisable to rely on sorts that have proved suitable to the particular district. Mr. Garner gives a selection of varieties at the end of each subject he deals with, a list that may

much larger than they are. It is unwise, however, to recommend planting Potatoes with a trowel, or with a dibber, which he condemns, because the making of a trench ensures the breaking of the ground thoroughly, and unless grown in friable soil Potatoes are never a great success; it is because the ground receives thorough preparation in the cultivation of Potatoes, the way to success is paved with the succeeding crop.

Fruit Growing.

A LITTLE volume on fruit growing from the pen of Mr. J. Turnbull, entitled *Fruit Growing Do's and Don'ts*, has been sent to

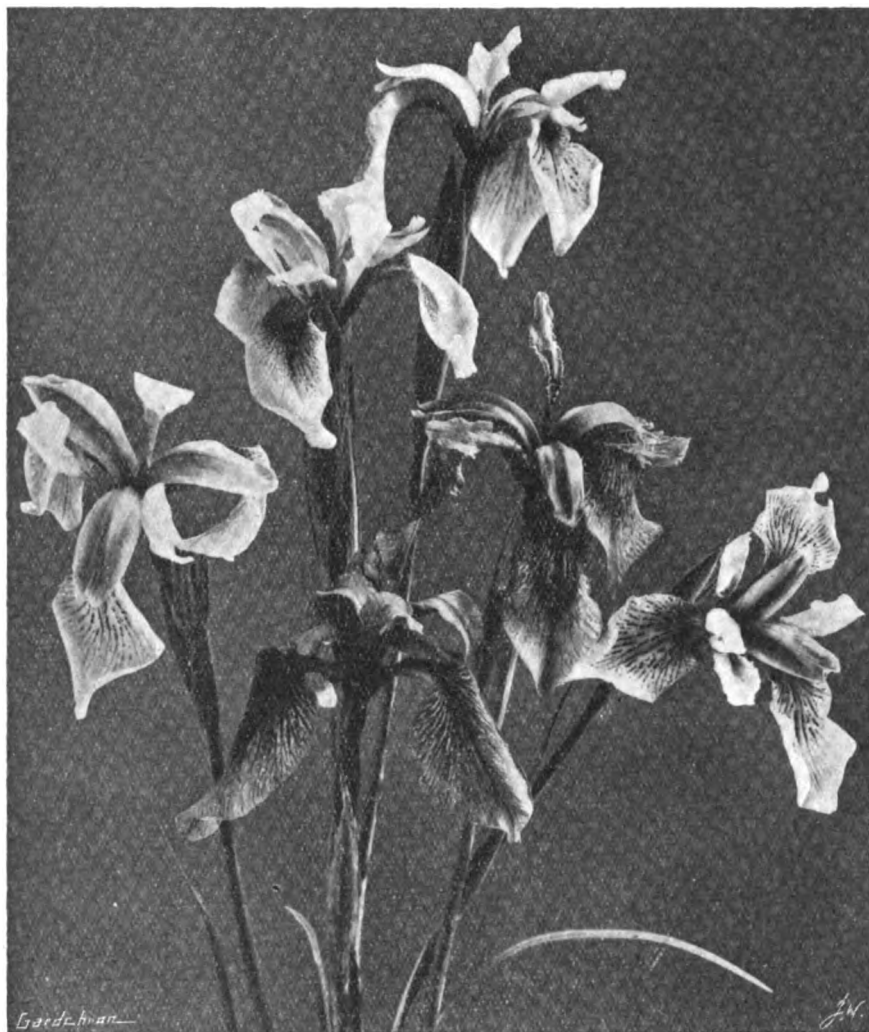


FIG. 4.—IRIS HYBRIDS (I. FORRESTII × I. CHRYSOGRAPHE) AT WISLEY.

be relied upon, but some might prefer to add others that they consider superior; for instance, in his list of French Beans he gives Ne Plus Ultra and Canadian Wonder for general sowing, but makes no mention of that excellent variety which comes in much earlier than Canadian Wonder, namely, Masterpiece. Cabbage Wrimingstadt is obviously a misprint for Winningstadt. We also notice that he has omitted that excellent Rhubarb, The Sutton, which we have never known to run to seed, a characteristic, apart from its other good qualities, which stamps it as one of the most desirable varieties. His hints on the growing of Potatoes, the all-important crop, are very valuable, and if amateurs would only take his advice to use the fertilisers he recommends, their crops of Potatoes would be

us by the publishers, Messrs. Methuen and Co., Essex Street, W.C. The price is only 2/6, and for such a modest sum a very pretentious work cannot be expected, but the author has made the best use of the fifty-four pages at his disposal, and many of his hints will be useful, especially to beginners. In a book of this nature, it seems that undue space has been devoted to the subjects of propagating and forming the young tree, for generally it pays the amateur better to leave these branches of fruit-growing to the nurserymen. This would have allowed more room for remarks on some of the more commonly-grown fruits, which in some cases are restricted to a very few lines, although Peaches, which are not extensively grown by amateurs, are treated in one of the biggest chapters.

* *Methods in Plant Histology*. By Charles J. Chamberlain, Ph.D. 4th revised edition. Cambridge University Press, Fetter Lane, E.C. 4. Price 10s. 6d. net.

† *Vegetable Growing*. By George Garner. Half-Crown Gardening Books. Country Life, Ltd., 20, Tavistock Street, Covent Garden, W.C. 2.

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THE LILIES OF EASTERN ASIA.*

THE Lilies of Eastern Asia have not lacked commentators, for so far as material has been available, they have been dealt with in critical spirit by Thunberg, Siebold and Zuccarini, Späe, Duchartre, Baker, Elwes, and Franchet, among others, and more recently by W. W. Smith. In particular, the botanical specimens sent to Paris by David and Delavay placed at Franchet's disposal a mass of material denied to previous investigators, with the result that in his enumeration† of the Chinese and Tibetan Lilies he was able to include many species till then unknown to science.

That was in 1892, and since then the adventurous men who have made and are making botanical history in the vast country between the western end of China and the eastern end of the Himalaya, have made further discoveries of Lilies. More fortunate than Delavay, they have been able to secure and send home seeds or bulbs of many of their own discoveries, as well as of Lilies previously found, and which were known only in herbaria. Several of these have been in cultivation for some years, and as their needs are understood the number will doubtless be gradually increased. It is not to be supposed that all the Lilies of Eastern Asia will prove amenable to general cultivation in this country, nor is it likely that more than a proportion will justify the expenditure of much time or trouble on their cultivation, for though such a thing as an ugly Lily is possibly non-existent, some of the Asiatic species are only of botanical interest.

It is possible that additions may yet be made to the tally of Lilies already known in Western China and Tibet, but whether or no, it is abundantly clear that the genus is more richly represented in the flora of that quarter of the globe than in any other. That being so, it is inevitable that the classification of a group of the genus which contains so many novelties should stand in need of revision. Such revision could hardly have been in more competent hands than those of the Assistant Director of the Arnold Arboretum, for his knowledge of the Lilies of Japan and China is first-hand; moreover, he has studied this

section of the genus in the field and in herbaria as thoroughly as he has studied other genera, and left little to chance. Unlike many investigators, he has not been content to accept the conclusions of any botanist without a thorough sifting of the material on which those conclusions have been based. In the result we have before us something more than an enumeration of Eastern Asiatic Lilies, something in the nature of a reconstitution of the genus.

The accepted classification of *Lilium* by J. G. Baker* divides the genus into five main groups:—*Cardiocrinum*, *Eulirion*, *Archelirion*, *Isolirion* and *Martagon*. Wilson would reconstitute the genus into four main groups which he regards as natural subgenera.—

three to the sub-genus *Martagon*, to which they certainly seem to belong, and leave only *L. auratum* to represent *Archelirion*.

The indefinite position of the fourth of the proposed four main groups, *L. lophophorum*, which leans to both *Fritillaria* and *Nomocharis*, as well as the vague specific position of the three obviously inter-related members of the third group (*Notholirion*), detracts from the value of the proposed reconstitution. A wiser course would seem to be to let the convenient classification of Baker stand till such time as the vexed question of the relationship of *Nomocharis*, *Fritillaria* and *Lilium* have been threshed out, as threshed out they must be. The search for finality in such matters may be

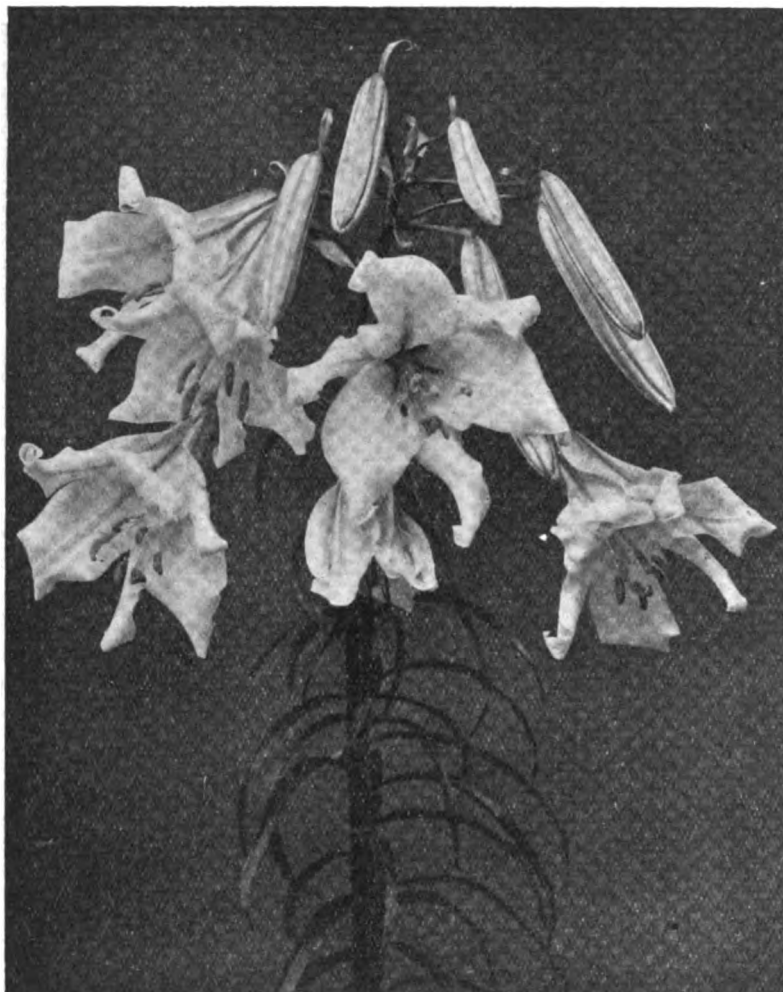


FIG. 5.—LILIUM LEUCANTHUM.

Eulirion, *Cardiocrinum*, *Notholirion* and *Lophophorum*, and would divide the first again into four distinct sections—*Leucolirion*, which includes the species hitherto grouped under *Eulirion*, that is the true or trumpet Lilies, as well as *Archelirion*, *Pseudolirium*—which supersedes Baker's *Isolirion*—and *Martagon*; in other words, for the purpose of classification, he would consider all but a fraction of known species as *Eulirion*, excluding only the small *Cardiocrinum* group, the equally small *Notholirion* group—*L. hyacinthinum*, *L. macrophyllum* and *L. Thomsonianum*—as well as his proposed new group of *L. lophophorum*, which is monotypic. Under Baker's classification, the sub-genus *Archelirion* included four species—*L. auratum*, *L. Henryi*, *L. speciosum* and *L. tigrinum*. Wilson would transfer the last

pre-ordained to failure, though it is certain that Wilson's investigations bring us appreciably nearer finality than we were before. It may, not, however, be impossible to find tangible characters in each genus which shall stand the searching ordeal of scientific examination, though Wilson's statement that he has not found a solitary character of positive specific value constant through the Eastern Asiatic group of Lilies is discouraging.

Meanwhile, whether the suggested reconstitution of the genus *Lilium* on Wilsonian lines is accepted or not, there need be less hesitation in accepting the majority of the author's conclusions as to the specific position of the Lilies with which he deals—old and new. Students of the genus have long been aware that there is ample ground for a thorough technical overhaul of the available material and for readjustment of

* *The Lilies of Eastern Asia. A Monograph.* By E. H. Wilson, M.A., Arnold Arboretum of Harvard University. Dulau and Co., Ltd., 34, Margaret Street, W.1. 1925. Price 25/- net.

† *Les Lis de la Chine et du Thibet*, Journ. de Bot., tom. 6., p. 305. 1892.

* Journ. Linn. Soc., Bot. vol. XI, p. 349.

old values. But few will have been altogether prepared for the far-reaching character of the author's conclusions, for his courageous reduction to varietal rank of many supposed species, or for the new light he has been able to throw on old problems.

Wilson deals, in all, with forty-seven species, of which only seven are unknown to specialist cultivators in Britain, and he has compiled a list of 188 synonyms for these species. The list involves the reduction of several *Liliums* hitherto accorded specific rank by one botanist or another, and it is hardly likely to be accepted without keen discussion; but in his enumerations of the various species, the author's reasons for the reductions are set out, and it is open to any investigator to question his conclusions. But the impression derived from a consideration of these reductions is that in the main they can hardly be resisted. Taking them in order, the more important of the reductions includes that of *L. japonicum colchesteri* to *L. Brownii* var. *colchesteri*, an alteration long overdue. Hooker's *L. Brownii* var. *leucanthum** is merged in *L. myriophyllum*, and *L. sulphureum* becomes a variety—*superbum*—of that species.

The reduction of *L. Brownii leucanthum* is sure to be challenged, if only because it impugns Hooker's description of the bulb as white. Wilson, however, insists that in the old world there is no trumpet Lily having a white bulb and axillary leaf bulbils concurrently, and we know that there is a bulbil on the herbarium specimen, No. 3273, of Delavay, on which Franchet founded *L. myriophyllum*.† Hooker described the margins of the nectary of his *L. Brownii* var. *leucanthum* as papillosely pubescent, but Wilson could find no pubescence on Hooker's type specimen. In describing *L. myriophyllum*, Franchet made the leaves uninerved and with revolute margins, but as Wilson points out, on the type specimen they are one to five nerved and not revolute. Franchet calls the bulbs "like that of *L. longiflorum*," but Wilson regards this as a mere guess, and as there is no bulb on Delavay's type plant and nothing on the ticket to indicate the colour, he may be correct.

Returning to the reductions, Farrer's Kansu Lily, No. 316, named *L. centifolium* in 1921,‡ becomes *L. leucanthum* var. *chloraster*. *L. yunnanense* is reduced to *L. Bakerianum*, with which *L. Lowii* is synonymous, and *L. Delavayi* is made a variety of *L. Bakerianum*. *L. bulbiferum* is placed under *L. davuricum*, and a section of the latter species is created for the almost innumerable forms of *L. Thunbergianum*, so often called *L. elegans*. *L. ochraceum* swallows up *L. nepalense* of the *Bot. Mag.* (t. 7043, 1889), not to be confused with Hooker's Himalayan Lily of the same name, as well as *L. Tenii*, *L. Duclouxii*, *L. majoense* and *L. Bodinieri*, all four created by Léveillé, that prolific originator of new species of *Lilium*. *L. primulinum* of the *Bot. Mag.* (t. 7227, 1892), also becomes a variety of *L. ochraceum*, a species of wide geographical range and unusual variation. *L. Farreri* and *L. Forrestii* are both referred to *L. Duchartrei*, to which species the former has already been reduced by Bayley Balfour. Baroni's *L. chinense* and Hooker's *L. sutchuenense*, of the *Bot. Mag.* (t. 7715, 1900), are now placed under *L. Willmottiae*, *L. sutchuenense* disappearing as a specific name. The author considers that *L. Maximowiczii* and *L. pseudotigrinum*, Carrière, are orange-flowered forms of the yellow-flowered *L. Leichtlinii*, a conclusion that can hardly be resisted. The disappearance of the beautiful but imaginary yellow-flowered Lily which Elwes figured as *L. Davidii*,§ and Wilson's proposed substitution for it of the Lily he published

as *L. Thayerae** were foreshadowed in *The Gardeners' Chronicle*.† Now *L. Biondii* and *L. Cavaleriei* are merged in the same fine species.

In the sub-genus *Cardiocrinum*, *L. mirabile*, Franchet, is considered as a Yunnanese form of *L. giganteum*, and though there are several points of difference, especially in the vernal growth of the two, it would be splitting hairs to retain the specific name Franchet gave the Yunnan plant. None the less the author does not hesitate to give specific rank to a Hupeh Lily of this group under the name of *L. cathayanum*.

In addition to the above changes, the following specific names have been sup-

posedly remember the discovery. It was raining heavily and I was tired, hungry and drenched to the skin after a fifteen mile walk, but I had to linger and drink in the beauty of this Lily. The plants grew in thickets by the roadside, and on the banks of a rock-strewn river and those of its tributary torrents, in loose, rich woodland soil, and only the flowers showed above the associate plants. To hold itself erect the stem needed the support of neighbouring plants, and I marvelled how such a tiny bulb could produce two, three, and even four large funnel-shape blossoms . . . This whole region has a heavy rainfall, and in winter a heavy snowfall covers the ground.

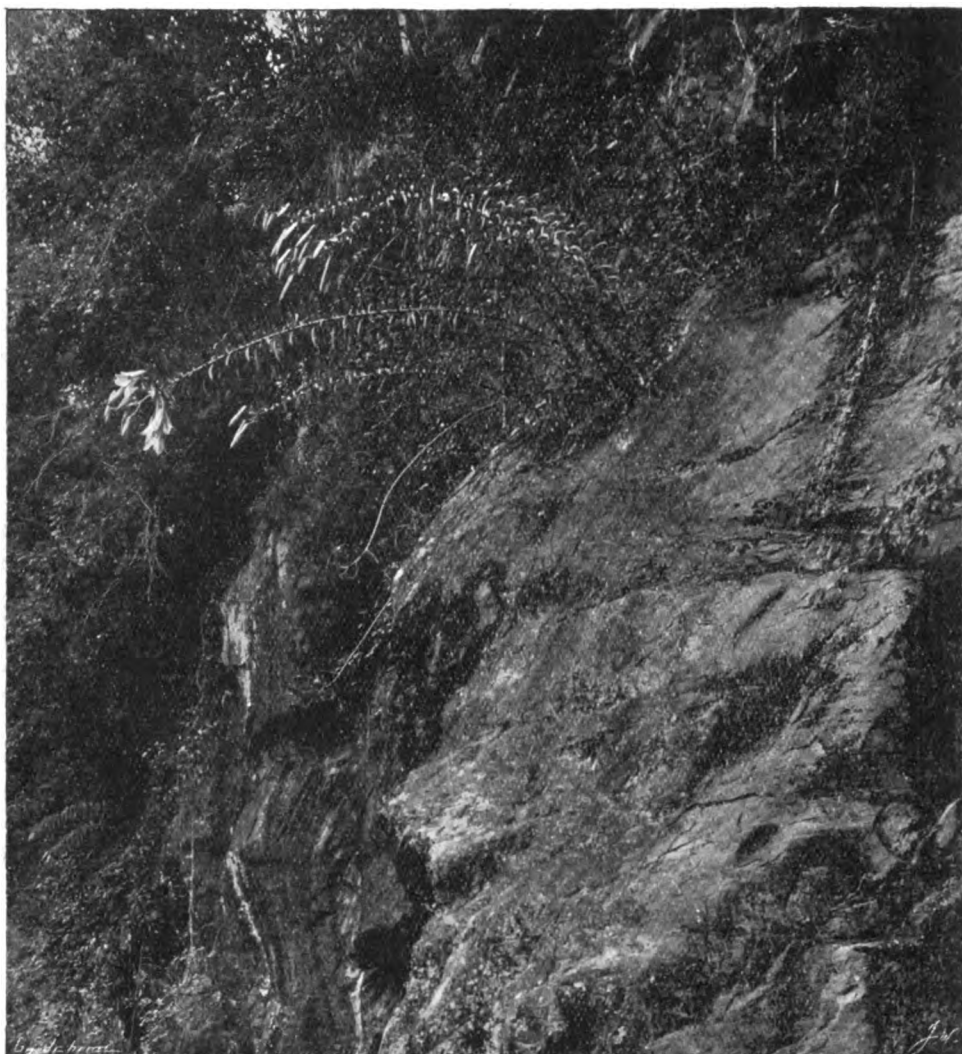


FIG. 6.—*LILIUM LEUCANTHUM* GROWING WILD ON SAND-STONE CLIFFS.

Reproduced from the frontispiece of *The Lilies of Eastern Asia*.

pressed:—*L. amoenum*, *L. Batemanniae*, *L. Feddei*, *L. Glehnii*, *L. Kanahirai*, *L. Konishii*, *L. Lincoorum*, *L. Mairei*, *L. Miquelianum*, *L. ochroleucum*, *L. Palibinianum*, *L. Taquetii*, and *L. Wallacei*.

An interesting feature in the *Monograph* is the first-hand account the author is able to give of many Lilies in their natural haunts. This is especially the case with *L. regale* and *L. Sargentiae*, a pair of Wilson's own discoveries. His description of the habitat of that old species, *L. japonicum*, persistently miscalled *L. Kramerii*, is particularly happy. "Near the village of Agematsu in Shinano province, I saw in some quantity both pink and white forms of this Lily in flower on June 13, 1914. I

The spring months are showery, but late September, October and November are dry with abundant sunshine. Where this Lily grows it never suffers for lack of water, and the soil is always cool but the drainage is good . . . " The story of *L. longiflorum* and its many varieties, including *L. Alexandrae*, amplifies and confirms the accounts published not long since of these Lilies by Grove*, and Wilson's confirmation of Ishidoya's discovery in 1916 of the habitat of *L. Hansonii* as Dagelet Island, off the coast of Korea, is interesting and important, for up to that year the *locus* of this common species was unknown.

When the author deals with questions of cultivation, he is on less sure ground, and such statements as that "most species of

* *Bot. Mag.*, t. 7722, 1900.

† *Journ. de Bot.*, VI. 313. (Sept. 1892).

‡ *Gard. Chron.*, ser. 3, LXX, p. 101 (1921).

§ *Mon. Lilium*, t. 24 (1880).

* *Kew Bull. Misc. Inform.*, 1913, 206.

† Ser. 3, LXII, p. 228, 1922, and LXXIII, p. 79, 1923.

* *Gard. Chron.*, vol. LXXVII, p. 220, March 28 1925; and *Garden*, p. 242, May 2, 1925.

Lilies detest lime" (p. 3); that "stable manure should not be used in their culture" (p. 5); that "the Madonna Lily resents moving" (p. 5); that "the bulb of *L. Willmottiae* is small and flowers so freely that it exhausts itself" (p. 68), or that the Yunnanese form of *L. giganteum* is inferior to the latter as a garden plant (p. 97), are evidently not the outcome of personal observation of the plants under careful cultivation. The statement, too, that *L. kewense* is lost to cultivation is incorrect, and the fable that *L. candidum* grows to better purpose in English cottage gardens than in the squire's garden (p. 1) should not be perpetuated. Where the squire leaves his bulbs alone till there are more than a hundred matted together in a clump, many of them exposed to wind and weather and slugs, as they usually are in cottage gardens, only a fraction of the stems produces flowers; but the fraction is sufficient to attract attention. Where the same number of bulbs is cultivated the effect is far finer.

On the whole, the process plates with which the *Monograph* is illustrated are hardly worthy of the book. The figure of *L. concolor*, in particular, is indifferent, and as it appears to have been reproduced from a photograph of a pot plant it should have been possible to have obtained a more satisfactory picture. The plate (IX) of *L. Willmottiae* is described as having had its origin at the Arnold Arboretum, but it is apparently identical with a photograph taken many years ago by M. Mottett, of the firm of Vilmorin. The other plates of Lilies are interesting in that they represent the plants growing in their natural habitat. The difficulties attendant on photography in the field are well known, and the interest of these far outweighs any question of their artistic merits.

The frontispiece, partly reproduced in Fig. 6, will be a revelation to most of the way some Lilies grow naturally. It represents a clump of *L. leucanthum* growing almost horizontally from the face of sandstone cliffs in Szechuan. The clump springs from what is doubtless a pocket of detritus and humus into which seed has no doubt fallen: as Fig. 5* shows, the trumpets of this Lily, at one time called *L. Brownii kansuense*, are large and heavy, and as one of the stems carries as many as nine, one may well marvel at the strength of the stem and of the anchorage the bulb must have in such a precarious-looking place. The outstanding difficulty in the cultivation of this Lily is the liability of the dormant bulb to decay in a wet winter, but in such a position drainage, as well as thorough ripening must be assured.

Apart from the scientific aspect of the *Monograph*, there are but few pages in which some observation of interest to growers of Lilies is not to be found. It is not generally realised, for instance, that the Tiger Lily is probably the oldest-cultivated member of the genus, and has been grown for more than a thousand years by the Chinese as an edible root (p. 73). Cultivators of *L. Maximowiczii* will be interested to know that in Korea this variety of *L. Leichtlinii* grows in black mould alongside streams and ponds, in swampy places and on slopes; always among coarse herbs and bushes (p. 72). Those who grow Price's alpine form of *L. philippinense* var. *formosanum*, which is generally about three-feet high in gardens, will be astonished to read that Wilson found broad-leaved specimens, six-feet high, growing among coarse *Miscanthus* grass on a windswept knoll at six-thousand-feet in the Nanto prefecture of Formosa. Seedlings of these plants flowered in the United States in six months from sowing, a slightly shorter period than the average.

Like most scientific work of value, the *Monograph* is not devoid of contentious matter, and is none the worse for that. It

is the work of a versatile hand which, if occasionally inclined to be dogmatic, knows its subject from A to Z, and is the most important contribution to the technical study of Liliaceae since the *Monograph* of Elwes (1880). The citation of authorities is unusually thorough—even to the occasional inclusion of names which carry no weight—and must have involved a prodigious amount of work. The index is entirely adequate and misprints are rare. *A. Grove.*

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XI.—(continued.)

IN THE RHODODENDRON FAIRYLAND.

CERTAINLY we had found the most amazing Rhododendron country I have ever seen. Stand anywhere, above 12,000 feet, and you could count a dozen species in flower around you. I have travelled in Szechuan, in Yunnan in the Tibetan

giant peaks. Rhododendrons were far fewer here, and mostly the same as those met with further north. On our previous visit to the Himalaya, we had found about thirty-five species in some eight miles of valley. On our second visit, though we climbed much higher, the pass being over 16,000 feet, we could only muster fifteen species, three of them not previously seen. These three were interesting, at any rate. One had the foliage of a "Triflorum," and a single moribund flower, not of the "Triflorum" type by a long way, more like a "Roylei," proclaimed it a second orange-flowered species. Another—and this rather a handsome bush, or small tree—had the hard leathery, narrow leaves and thick felt of a "Roxieanum"; the flowers were over, but the persistent corollas still clung shrivelled round the furry capsules. This species was particularly beautiful at this season, because of the contrast between the young foliage and the old—a contrast equally striking in the case of the "Lacteam," of which I now secured a good photograph.

The third species was even more revolutionary than any of the others—a "Lepidotum" with yellow flowers, instead of the



FIG. 7.—PRIMULA SP. § SIKKIMENSIS:
(K.W. 5839) growing by a stream.

Marches, and in the jungles of the Burmese frontier; I have climbed Japvo, in the Naga Hills, crossed the headwaters of the Irrawaddy, and been through Sikkim; but never have I seen anything approaching the sights we saw here. The nearest parallel was certainly the Rhododendron scrub forest through which I passed on my journey across the headwaters of the Irrawaddy in 1922; but it was winter then, and scarcely any of the plants were in flower. Once more has the Himalaya vindicated its claim to be considered the home of the finest Rhododendrons.

After this experience, we naturally concluded that the peaks and passes further east, and nearer to the great snow peaks, would yield yet more Rhododendrons in still greater variety. It was towards the end of July that we paid our second visit to the Himalaya—naturally we could not hope to find many species in flower. It was a great surprise, however, when we found a complete change in the vegetation so close to the

usual purple, magenta, or cerise. It formed little clumps on the gneiss cliff, above a fine glacier lake, and was quite showy, though the colour is pale; it obviously recalled the little Sikkim *R. elaeagnoides*, also a "Lepidotum."

We were unable to cross the pass on account of the deep snow, and, in fact, had rather a struggle, often floundering knee deep, to reach the summit; and with this modest bag we had to be content.

XII.

THE PARADISE OF PRIMULAS.

I HAVE already mentioned some of our Primulas; on the Himalayan range, however, we found an entirely different race of these beautiful flowers, just as we did in the case of the Rhododendron.

There was for instance the astonishing bog Primula (K.W. 5839) with its daffodil-yellow flowers, often tinged with brick-red on the outside, and its sweet fragrance. It grew in sheets on the muddy alpine slopes (see Figs. 7 and 8) facing south, sodden from melting snow. I have never seen a Primula like it before, and suspect that when harvest times comes, we shall see in it a link with the *Omphalo-*

* From *Gard. Chron.*, ser. 3, LXVIII., p. 115 fig. 45 (1920).

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, and June 20, 1925.

gramma section. K.W. 5858 is rather like a small Cowslip, with flowers of a deep golden yellow. It might come in the "Sikkimensis" series; while K.W. 5857, with small, white flowers, is probably a "Petiolaris," and, anyway, not worth troubling about. It may be *P. vernicosa* itself.

On June 25, when we first stood on the topmost ridge of the Himalaya in the snow, at the very summit of the pass, I spied "Cherry Bell" (K.W. 5859). Of dwarf Primulas, this is quite one of the most charming. Its nodding flowers of deep cherry red, like drops of cherry brandy against the snow, stand about two inches off the ground on slender stems. Evidently an "Amethystina." Can this be the rare *P. Kingii*, which is said to have claret-coloured flowers? I should not be inclined to substitute "claret coloured" for "cherry-coloured" in our plant—certainly not to drink claret of that colour; but botanists are apt to be vague, even ambiguous, about flower colours. Our plant then may possibly be *P. Kingii*, or it may be new, like most of our species; at any rate, it is a gem.

The many coloured "Sikkimensis" Primula I have already referred to; we found a blue form, or, at any rate, an almost pure violet, almost constant in colour—surely the first blue "Sikkimensis" ever heard of. Even more amazing in its chromatic instability was a plant we found far down on the eastern face of the Himalaya, Primula K.W. 5867. The first plants found on a grassy alp amidst the surging sea of Rhododendron, had large, mauve-grey flowers with a yellowish-brown centre, the one fading and shifting into the other. Presently we found a slope quite violet with a taller Primula, which had a yellow or brown eye. At first sight I could have declared these were different species, but on comparing them, I was forced to admit their identity in all but colour. Still lower down we came to a marsh, carpeted with beautiful Primulas, cream with a large orange eye—and, behold, it was but another alias assumed by our grey-mauve plant! Truly a harlequin. Later we found all three varieties growing together, the colours glancing and changing like those of shot silk. A species of the "Sonnchifolia" section and the only one we found—unless another similar plant from north of the river turns out to be different, which is unlikely—is numbered K.W. 5831. Neither was seen in flower, and it will be interesting to see how it compares with *P. sonnchifolia* itself. Seeds of K.W. 5831 were gathered at the end of June, and seeds of K.W. 6045 (presumably the same species) at the end of July, when they were being sluiced out by the rain; so they have a long, dry wait before them till next spring. The problem is to keep them alive under these unusual conditions, when in their natural surroundings they would lie in the soaked forest mould till the autumn, and under snow throughout the winter, to break into life, as we may suppose, next April or May, before the snow has disappeared.

A glorious little bog Primula is K.W. 5869, forming sheets of orange-flowered fragrance on the alpine mud slides of Pernako. It grows only two or three inches high, but the flowers are as large as wild Primroses.

Another species of the "Petiolaris" section, I believe, has sulphur-yellow flowers with bright orange eye. This plant (K.W. 5868) grows amongst stones and mud, in pools below the snow drifts, at about 13,000 feet, and has an immense root system. The flowers—it was only just in flower on June 29, when we paid our flying visit to India—develop before the leaves, and doubtless a mass of foliage will develop later.

While bog Primulas, meadow Primulas, and woodland Primulas are abundant in this part of the world, rock Primulas are curiously rare. Still we did find some; and amongst them, what is I think perhaps the most lovely Primula I have ever seen. That may sound a rash statement, when one recalls the hundred or more Primulas one has seen flowering in Asia; but I maintain it with caution—after all it is a matter of taste. It is also a matter of practical politics. I would always be prejudiced against a Primula, no matter how beautiful, which defied every effort to grow it at home. Thus *P. sonnchifolia* is ruled out, and *P. spicata*, over whose prostrate English corpse some have shed tears, I have never seen. The "Muscarioids" and the "Omphalogrammas," besides being *difficile*, are more queer than beautiful, the "Bellas" too small, the "Sikkimensis" too big, the "Candelabras" too starchy. Where to place this charming species, which I must

gneiss cliffs, and is an excellent, showy little plant for the rock garden.

We found no Primulas of the "Suffruticosa" section, which are essentially (though not always) limestone plants, possibly because we came across no limestone; and the only other truly rock Primulas met with were two "Dryadifolias," with bright crimson flowers. One of these was so like my recollection of *P. dryadifolia* itself, that without a specimen of that plant, I could not point out the difference. The other was a more compact cushion-like plant, with smaller, more closely fitted leaves. This latter grew on the rocks amongst the dwarf Rhododendron, with mats of rose-pink and lemon-yellow *Diapensia*.

Most of the Primulas above enumerated were flowering in June, but the rock Primulas, which come from high altitudes, were later, being in fine bloom at the end of July. Even later was the large "Sikkimensis" (K.W. 5781), which, though first flowering towards the end of June, was not at its best till the end of July, and was a glorious sight right up to the middle of August. This is quite one of the finest bog Primulas I have ever come across—one plant we measured stood four feet seven inches high, with leaves ten inches long and nine inches across. It was extraordinarily abundant in every copse and spinney where water was running, clogging the streams with its roots, the air with its fragrance.

I have already referred to the discovery of a "Maximowiczii" Primula in this part of the world. On our second visit to the Himalaya in July, not only did we find that species again on the Himalayan range itself, but we found a second species with yellow flowers, quite like those of *P. szechuanica*, except that they are delightfully fragrant. In this case the petals are completely reflexed against the tube, as in *P. szechuanica* (they are merely bent back in the chocolate-flowered species), but are not twisted. Both plants were found growing together, and they sometimes reach a height of three-and-a-half feet, with three whorls of flowers. Old shrub-clad moraines are favourite situations for them. In fruit they closely resemble each other, but the purple-tinged capsules of the chocolate one betray it.

There is a "Capitata" Primula coming on, but I have not yet seen it in flower. In all we have found about thirty-five species of Primula, belonging to more than fifteen sections. F. Kingdon Ward.



FIG. 8.—PRIMULA SP. § SIKKIMENSIS: (K.W. 5839). Giant Cowslip, clogging a stream.

designate as K.W. 6003, I know not. The thin petiole, rounded and lobed leaves, white with meal beneath, at once suggest the "Malacoides" group; but the large flowers, never whorled, and the habitat—cliff crevices at over 15,000 feet, forbid it. The flowers are a rich mauve, paling to an almost white "eye," with very regularly rounded lobes, not cleft in any way, arranged in terminal umbels and sweetly fragrant. In foliage, too, the plant is charming, the snowy-white under surface being a feature. Now mauve is a popular colour, fragrance is welcome, and good foliage compensates even for a short flowering period. Here then is a first-class plant if only it proves tractable; though it ought to be quite hardy. I imagine it will prove a popular pot plant—that is, if I can secure it. But it is desperately rare—or we only reached the fringes of its domain, and to hit off the right moment to scale those crags again and gather what seeds I can find will be no easy task.

Far more abundant was an obviously allied species, with much the same foliage, and deep violet, non-fragrant flowers, K.W. 5985. It grew in small colonies on the

NEW NOTES.

THE GREENHOUSE.

THE Greenhouse, or as it is known officially, No. 4, is one of the most interesting of all the numerous glasshouses at Kew. It is certainly the most popular, and probably no other glasshouse anywhere is visited by a greater number of people during the course of the year. It is gay with decorative flowering and foliage plants at all seasons, even in the depth of winter, and those who have to maintain a bright display of plants in conservatories and greenhouses would be surprised at the large number of plants which may be utilised for the purpose, for Mr. Coutts, under whose charge this particular house comes, makes use of many unusual subjects for the purpose and some which are rarely grown in private establishments.

The Greenhouse is built in the form of a cross and has stages along either side and a broad bed along the middle; the beds in the central part are of sufficiently generous size to accommodate large evergreen shrubs, including several big Camellias.

The plants on the stages are grown in pots, and many big pot plants are arranged in the central beds, so that when these are over they may be removed and fresh subjects substituted in their season of flowering. Perpetual-flowering Carnations in pots are in bloom almost all the year round, and just now there is a showy batch of these plants near one of the entrances. Most of the flowering plants are grouped in batches with an eye to colour effect, and they make a very bright display. *Statice Suworowi* provides a fine patch of pink with its tall inflorescences. Some well-grown *Petunias* include a seedling known at Kew as *Purple Robe*, which Mr. Coutts has selected and perpetuated by means of cuttings; it is a variety of somewhat tall habit, indeed specimens have been grown at Kew attaining to a height of six feet. The flowers are of a magnificent royal purple.

Torenia Fournieri makes nice, bushy pot plants furnished with a wealth of pretty flowers which are coloured lavender-purple and yellow, the purple being in big blotches on the two side petals and the tip of the lip, which has a yellow blotch; *Godetia Schaminii*, one of the finest of the named double-flowered *Godetias*, is included, and makes an attractive subject. *Begonia Corbielle de Feu*, of which there is a large batch, is edged with *Begonia Schottii*. The latter is a plant that is not so well known as it deserves to be, for it makes compact little specimens in pots, with flowers somewhat like those of *Begonia semperflorens* and has pretty, unequal-sided leaves of a greyish colour. *Nicotiana Sanderae*, of which there is a fine batch at present in flower, makes a good plant for indoor decoration. The stage is also furnished with very fine *Gloxinias*, plants which are always magnificent when well-grown and finely flowered.

Impatiens Oliveri is a splendid plant for the bench, as dwarf specimens in pots it is grown in the greenhouse at Kew over many months, for it is a continual bloomer. When planted out in the beds it makes big bushes, and these also are very attractive; the flowers are soft mauve and shaped like those of a *Mitonia*. The plant is very free in blooming, propagated easily from cuttings at any time, and is to be strongly recommended for greenhouse and conservatory decoration; *I. Holstii* is even more striking because of its rich, glowing, orange-scarlet colour. This species may be treated in the same way as *I. Oliveri*, and specimens now at Kew have been flowering for some three months.

Another fine plant that has been in bloom in the Kew conservatory for three or four months and will go on flowering practically indefinitely all the year round, is *Isoloma hirsutum*; the tube of the flower is rich scarlet, and the reflexed segments of the mouth are spotted and lined with deep red and yellow. Both the foliage and the stems are very handsome, owing to their velvety texture. A pot specimen of *Clianthus Dampieri* on the stage has been in bloom for more than two months.

Some of the Lilies are used by Mr. Coutts for the decoration of the stage, including *L. regale*, which he regards as one of the most useful of all Lilies for pot cultivation; this fine species is perfectly hardy and easily raised from seeds.

Dianthera nodosa, a member of the *Acanthaceae*, produces dense clusters of flesh-pink coloured flowers which have a tri-partite lip, so that they have a fringed appearance. Each leaf axil bears a cluster of these pretty, pink flowers, and a well-grown plant in bloom is of very striking appearance. The dainty *Trachymene caerulea*, with its head of Wedgewood-blue flowers, is most interesting because of the method by which the blossoms are arranged in an umbel, all on the same level, the pedicels of the central flowers being short; those of the succeeding blooms in the head being longer and longer until the outermost ones are of very great length. This plant

is sometimes known in gardens as *Didiscus*; its popular name is the *Lace Plant*.

Jacobinia magnifica and its variety *carnea* make excellent pot plants of a small size, and as they may be propagated at almost any time and will flower in successional batches, they may be had in bloom over a long period.

A plant of uncommon appearance, and one that is of great interest to the public, is *Haemanthus Andromeda*, a member of the *Amaryllidaceae*, which does much better in a cool greenhouse than in the stove because the blossoms last much longer under cooler conditions. It is not difficult to propagate, for it produces offsets freely. All the parts of the somewhat curious flowers are of interest, and the inflorescence has been likened to a feathered Hyacinth.

One part of the stage in one of the wings has been gay for several weeks with a mass of the rich yellow *Calceolaria Clibranii*, which Mr. Coutts flowers in profusion in 32-sized pots. The end stages of this particular wing are furnished with varieties of *Hydrangeas*; a splendid selection of these striking plants in a great variety of colours. The old *Lychnis Coelia-rosea*, which may be had in several pretty colours from seeds, makes a very good bench plant, and, being light and graceful in habit, it is useful for interspersing with other subjects.

One of the most interesting of all the plants on the stages is a batch of *Chrysanthemum Parthenium* fl. pl. It is not often used for this purpose, but it is admirably suited for greenhouse decoration, as the well-grown specimens at Kew amply testify. The flowers are pure white, perfectly double, about as big as a sixpence, and poised lightly on the much-branched inflorescence. The main axis gives a great wealth of flowers, and all the side growths furnish their quota of blooms.

Some of the *Calceolarias* raised by the late Mr. Allard at the John Innes Institute, and especially the *cana* hybrids, are exceedingly attractive; the one named *Maid of the Mist* is a delightful plant and fine for show houses in private establishments. *Nicotiana suaveolens* is a charming little plant growing about eighteen inches high and bearing white flowers on long pedicels. It is to be regretted that this dainty little plant is not fragrant as are some of the other *Tobaccos*. These are some, but not all, of the many attractive flowering plants to be seen in flower now on the stages.

The beds are equally as interesting, and the iron pillars by which the roof is supported are furnished with a great wealth of climbing species. One of the most striking of these latter is *Bougainvillea Mrs. Butt*, which Mr. Coutts also flowers in small pots, and he informed us that it will do quite well even in 60-sized pots. The colour of the flowers is crimson-lake, fading with age to a rosy-cerise. It is by far the most handsome of all the *Bougainvilleas*. Another climber of great interest is *Streptosolen Jamesonii*, which smothered itself with blossoms of rich orange. Near the *Streptosolen* is a pretty plant of *Fuchsia macrostemma* var. *variegata*, of very graceful habit; the plant produces in profusion long, red flowers with a deep purple centre. Another fine *Fuchsia*, the variety *Mrs. Roberts*, is grown as large standards in pots on the beds. This *Fuchsia* makes a fine basket plant; the big flowers are very bright red and when open almost scarlet. *Lavatera Olbia* var. *rosea* shows well amongst the greenery of other plants in the bed, and is quite amenable to pot cultivation. A considerable group of *Trachelium coeruleum* in the centre bed is making a grand display with the light and airy inflorescences of hazy-blue flowers. In the centre part where the beds are, as stated, of considerable size, is one of the finest clumps of *Strelitzia Reginae* in cultivation, bearing large numbers of the curious inflorescences.

Hereabouts are the big *Camellias*, which are, of course, out of flower, but very handsome with their glossy green foliage. Growing up one of the pillars near the

Camellias is the beautiful blue-flowered *Sollya heterophylla*, now a mass of bloom. The flowers, which are known as Australian Bluebells, are a delightful opal-blue colour, and the whole plant has a very graceful appearance. One of the most agreeable surprises was to see fine plants of *Canna* in bloom, for this handsome-leaved exotic has been greatly neglected in recent years, although it has few rivals either as a foliage or flowering plant. The effect of a mixed batch of these plants was very fine, the principal varieties being *Victoire*, salmon-rose; *President*, terra-cotta red; *Prince of Orange*, Wintyer's Colossal, vermilion; *Oiseau d'Or*, yellow; *J. B. Van der Schoot*, yellow, spotted red, one of the best for pot cultivation; and *King Humbert*, paler yellow, but also spotted with red and having light green leaves.

To enumerate the whole of the many fine plants in the beds would require more space than is at our disposal, but brief mention may be made of a specimen of *Begonia Haageana* in a big pot; *Begonia coccinea*, which makes a lovely pillar plant; *Lilium centifolium*, which has sent up a stem ten feet tall, bearing six expanded blooms and four buds; *Rehmannia angulata*, a most dainty plant which has been continually in bloom for many weeks; *Eleocharis cyanus*, an evergreen shrub which has pretty, white, fringed flowers along the undersides of the shoots, forming axillary racemes, the blossoms being succeeded by turquoise-blue fruits; *Alberta magna*, a South African shrub which has been in flower on and off for several months, develops reddish tubular flowers in clusters of ten or twenty, the several clusters forming a racemose inflorescence; and *Roupala Pohlilii*, a very ornamental foliage plant which will grow in colder conditions than is generally believed, for it is usually cultivated in a stove. It is an exceptionally handsome foliage plant with pinnate leaves, the pinnae being one sided, the inner side being as though cut through with scissors, but sharply crenate on the outside. The whole of the plant, including the foliage, is covered with a rust-coloured tomentum, and if it could be propagated readily it would make a splendid market foliage plant.

Amongst the climbers, other than those mentioned, interesting plants now in flower are *Passiflora coerulea* *Constance Elliott*, the blue-flowered *Clerodendron ugandense*, *Solanum Wendlandii*, and the scarlet *Lonicera sempervirens*.

HARDY FRUIT GARDEN.

RED-LEAF IN STRAWBERRIES.

MANY gardeners are in difficulties as to what to do to overcome this troublesome disease of Strawberries. In some cases drastic measures may be taken; in others it is not possible. The complaint was very prevalent here after 1921, and I had not a good Strawberry plant in these gardens. The leaves turned a sickly yellow and red, and were very small. After hearing several experts declare that eel-worm was the cause, I examined the plants and found they were right. I burnt every plant I had and made a fresh start with clean stock, growing the plants for one year only, for so soon as the fruit was harvested I cleared the bed, burnt the Strawberries and replanted strong, robust runners; this year I have, at the time of writing, a healthy batch of Strawberries that are fruiting well.

Where space can be spared I would advise a plot of ground to be given up entirely for stock plants, and to replant the beds every year with strong, healthy runners. To produce strong runners for the new beds the following season it may be necessary to buy fresh stock of some varieties yearly. These stock plants should not be allowed to flower, but the trusses should be removed as they appear, giving the plant the opportunity to make strong runners. *E. Neal, Tilgate Gardens, Crawley.*

AMERICAN FRUITS.

CURRANTS.

In late years some very interesting articles on Currants have been published, especially those in the *Journal of Pomology* by Mr. E. A. Bunyard on Red Currants and those by R. G. Hatton on Black Currants.

While all our cultivated varieties of the Black Currants belong to one species, *Ribes nigrum*, Linn., the origin of the Red and White Currants is far more complicated. Generally *Ribes rubrum*, Linn., is supposed to be the mother species from which the Red and White Currants descend. This, however, is not the case. *R. rubrum* is a northern species inhabiting England, northern Germany, the Baltic shores and Scandinavia, where it occurs in several varieties. The only cultivated Red Currant varieties that belong to this species are London Market and Victoria. According to Janczewski some other such varieties are grown in gardens in North-eastern Europe, but they seem to be of inferior quality and never found their way into general cultivation.

Another totally different species, occurring in Western Europe from North-western Italy to France, Belgium, Western Germany and England has long been confused with the former northern Red Currant, until the elder Reichenbach separated it in his *Flora germanica excursoria* (1830-32) as var. *sativum*. Syme in *English Botany*, ed. 3, vol. IV. (1865), first raised it to specific rank and his name *Ribes sativum* (Reichenbach). Syme, has to stand and the names of *R. domesticum*, Janczewski (1900) and *R. vulgare* of the same author and Schneider (1905 and 1907) have to be dropped as synonyms.

Of *R. sativum* numbers of Currant varieties are cultivated, as Chautauqua, Diploma, Filler, Red Cross, Versailles, Wilder, etc.

R. sativum macrocarpum (Jancz.), Bailey, is a well marked botanical variety. It is more vigorous, has firmer leaves of a peculiar deep, almost bluish-green and larger fruits. Its origin is not known; it is believed to have originated in Italy in the early half of the last century. At this date at least it was first introduced from that country into France, but probably it is much older.

To *R. sativum macrocarpum* belong the varieties Cherry, Everybody's, Fay's Prolific, Giant Red, and Ruby.

The most marked features of these varieties of *R. sativum* and *R. sativum macrocarpum* are the very flat, greenish or yellowish flowers with a distinctly raised ring or rim in the bottom, which often assumes a reddish or brownish colour. This ring is entirely absent in the flowers of *R. rubrum*, where the flowers in addition are never as flat, but more urn or broadly funnel shaped. Another distinction is that the anthers of *R. sativum* and its variety possess an increased connective, keeping pollen sacs or anther cells far asunder, whilst in *R. rubrum* the connective is small and the anthers have a normal, roundish appearance.

Between the two species, *R. rubrum* and *R. sativum*, occur hybrids (*R. Houghtonianum*, Jancz.), and to these most of our cultivated Red and White Currants belong. The characters of these hybrids vary between those of the parents; the flowers are usually less flat and show a more or less marked ring and a more or less enlarged connective. Nothing is known as to where and when these hybrids originated, and as both species overlap in their original distribution, it is to be presumed that they occur also spontaneously. The Red Currants of this descendancy are Knights' Large Red, North Star, Perfection, Red Dutch, etc. The White Currants are White Dutch, White Grape, White Imperial, and White Transparent.

A third species, *Ribes petraeum*, has also been concerned in the origin of some of our Red Currants. This is decidedly different in the shape of its leaves and flowers. The leaves are generally bullate between the veins and doubly toothed. The flowers are distinctly cup shaped, suffused with reddish-brown inside and with a round, prominent hump below the insertion of each petal, which is larger than in all the other Currants grown for their fruit.

Ribes petraeum is a mountain plant with a wide distribution ranging from the Atlas mountains and the Pyrenees in the West to Northern Asia, perhaps as far east as the Sea of Ochotsk. The European plants from the Pyrenees, the Alps, and the Carpathian Mountains show slight variations. *R. petraeum* is not grown for its fruits, but the cultivated variety known as Prince Albert is evidently a hybrid between it and *R. rubrum*. This variety is very distinct and easily picked out by its robust, reddish young shoots and peculiar leaves, in any Currant plantation. It starts into growth late in spring, but is very productive, although its berries are somewhat more acid than those of other kinds. Nothing is known as to its origin; it is an old garden plant and said to have been cultivated for over two hundred years.

To another hybrid, between *Ribes petraeum* and *R. sativum*, belongs the Gondouin Red, which is occasionally grown.

Little has been done to ameliorate the Currants. The seedlings seem to show no great tendency for further improvement. Yet there are numbers of Asiatic species which could be used in crossing, such as *Ribes manshuricum*, *R. Warszewiczii*, *R. setchuense*, and especially *R. longiracemosum* which has racemes a foot long or more and large, black, good flavoured berries. Possibly with such crosses a new impulse could be given and new and improved varieties might be originated.

GOOSEBERRIES.

THE European Gooseberries do not, as a rule, succeed well in the Eastern United States, as is equally the case with the European Pear and the European Grape. The extreme climatic conditions do not seem to suit them. Indefatigable efforts of the American horticulturists are, however, little by little overcoming these obstacles by raising their own varieties, chiefly from native species. Considering the short time that methodically scientific breeding work has been carried on, such as at the New York State Agricultural Experiment Station at Geneva, N.Y. under the supervision of Dr. U. P. Hedrick, surprising and most encouraging results have been achieved.

Nevertheless, the American Gooseberries are still behind the European varieties in size and flavour, but they are certainly much better adapted to our peculiar climatic conditions. They are very productive and their particular flavour is preferred by many.

Whilst the European Gooseberries are all of the same species, *Grossularia reclinatum* (or *Ribes Grossularia*), and of the variety *Uva-crispa*, the American varieties are crosses between this Old World species and several American species.

The first American Gooseberry, Houghton, appeared about 1847. It originated probably as a chance seedling between *G. reclinatum* *Uva-crispa* and *G. hirtellum*. This species is a native of eastern and central North America, from Newfoundland to Pennsylvania and West Virginia to South Dakota and Manitoba in the West. It is of bushy, rather spreading habit, with slender, arching branches, and is usually much less prickly than the Old World Gooseberries. The leaves, at least those of the long new shoots, have a decidedly wedge-shaped base, by which the variety is easily recognised. It has been much confused with *G. oxyacanthoides*, *G. inermis*, and *G. gracile*, but it

may always be distinguished by its leaves and other characters.

Its crosses with the typical *G. reclinatum* are more numerous, as is to be expected. Such hybrids are represented by the varieties Downing, Pearl, Poorman, Red Jacket, Van-Fleet, and Houghton Seedling.

The varieties Carrie, Pale Red (or Cluster and Ohio Prolific) are almost pure *G. hirtellum* with very little traces of *G. reclinatum*.

Another American species that was used in crossing with the European Gooseberries is *Grossularia Cynosbati*, a very common plant in woods in Eastern North America. It has roundish, shallowly-lobed leaves with a truncate or subcordate base, and long slender, mostly two-flowered peduncles. The ovary usually carries small, soft prickles which remain on the ripe fruit; but the variety *inermis* is without prickles.

The cultivated descendant of this species, a cross with *Grossularia reclinatum*, is known as the Mountain Gooseberry. It found its way also to Europe and at one time it was much advertised. Maurer in *Stachel-beerbuch*, p. 66, gives a full description and a good figure of it, but it does not seem to have found many admirers.

Other crosses have lately been made, for instance between *G. missouriensis* and *G. reclinatum*, and between *G. divaricatum* × *G. reclinatum* × *G. hirtellum* with more or less promising results. But the number of native American species of Gooseberries with promising edible fruits is large, and it is hoped that these efforts will result in highly qualified varieties, worthy of cultivation for the various climatic conditions of the United States. *Alwin Berger, Agricultural Experiment Station, Geneva, New York.*

VEGETABLE GARDEN.

SPRING CABBAGES.

THE Spring Cabbage crop is a very important item in the economy of the vegetable garden, and the time is at hand for again commencing the round of culture. Opinions vary as to which is the best time for sowing the seeds. Having regard to geographical position, I have found the middle to the end of July to answer well. The soil of the seed bed should be light in texture and have an open aspect. It should contain a good quantity of lime as a corrective of finger-and-toe disease.

The seeds germinate in a few days and it is good practice to transplant the seedlings into nursery beds before they become overcrowded in the drills, for suppy, spindly growth only results in failure. For this reason the soil in the plant's permanent quarters should not have an appreciable content of new organic manure.

I find the crop does well on land which has grown early or second-early Potatoes without the addition of any manure. In gardens where Potatoes are not raised the rotation might be so arranged that Spring Cabbages follow Broad Beans and Peas, also without the soil receiving manure. In both instances the land should be dug, made moderately firm, and the surface reduced to a fine tilth. The most successful plantations usually result from late September planting. The plants have then an opportunity of becoming established before the cold of winter retards growth.

The rows should be made fifteen to eighteen inches apart and the plants in them twelve to eighteen inches asunder according to the vigour of the variety. If a ridge of soil, four inches in height, is drawn up to the plants in early November it will protect them from disturbance by high winds. Hard frosts frequently loosen the soil so much that the plants are thrown in peril, from which they may be rescued by treading around them after a thaw has taken place. In cold, exposed gardens it is good

practice to mulch the soil with Bracken at the approach of winter. I am acquainted with certain exposed districts in the North of England in which this is a recognised practice, backed by successful experience. The cold days of March are critical days for Spring Cabbages. There may be an abundance of food in the soil but little of it can be rendered available. A dressing of sulphate of ammonia or nitrate of soda should be applied at this time, to give the needed stimulus. I prefer the latter compound because it comes into action a little more rapidly. Half an ounce per plant is an ample application.

There are very many varieties in commerce, of which the following may be regarded as reliable—Sutton's April, Harbinger, Wheeler's Imperial and Offenham. These sorts mature early and rarely bolt. *Gco. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

Stephanotis Seedlings.—In reply to Mr. C. May's inquiry (p. 402, Vol. lxxvii.), *re* Stephanotis seedling it may interest him to know that about six years ago I had two fruits ripen here. The seeds from the first seeds were sown and numerous plants were raised. The seeds from the second fruit were not sown and I find there are about eighty of them. Attached to each seed is a large, silky pappus. A good illustration of the fruit is given in Nicholson's *Dictionary of Gardening*. *G. H. H. W., Basingstoke.*

Operation on a Standard Rose.—Dr. E. C. Hardwicke may be interested to hear that an experiment similar to his own has been tried successfully here. About two years ago my standard of Killarney Rose was blown over and the stem partially cracked across just above ground. I bandaged it and earthed it up and the tree flourished as if no damage had been done. This spring a high wind broke it away from its stake and laid it low, the old fracture was re-broken and this time right across, only about an inch of bark remaining in attachment. I again joined the broken ends together and bandaged them firmly. The plant is flowering again, not quite so vigorously as usual, but that might also be due to the past wet season. *A. J. C., Pulborough.*

—Although it had not come within my limited experience it appears that the legs of standard Roses have been repaired successfully before my example, as Mr. Johnson proves on p. 457 in a first, but not, one hopes, the last entertaining paragraph on the subject. In the meantime, he and doubtless other readers of my note (p. 440) will be glad to know that Dr. Hardwicke's patient "continues to make quite satisfactory progress," as the professional bulletins record. *W.*

Impatiens Holstii.—With reference to Mr. F. J. Clark's note on seed-sowing in the issue of *The Gardeners' Chronicle* for June 13th, it may be of interest to your readers to know that one subject (*Impatiens Holstii*), which he includes as a winter-flowering plant, may be flowered successfully all the year round. I have grown it for many years and find that propagation by cuttings gives the best results. After trying different methods of propagation I have persuaded one plant (*Impatiens Sultani*) to adopt a creeping attitude, and find that multiplication in the number of plants will be an easy matter, owing to the stems and small shoots rooting into the soil around the parent plant. Our native species has very deep yellow flowers, and blooms in the month of August. It is found in our northern counties in damp places and is a plant worthy of note. *E. D. Deighton, Red House Gardens, Blidworth, Notts.*

Adenandra uniflora.—The plant shown at Chelsea under the name of *Diosma uniflora* was really the above. Linnaeus was the author of *Diosma*, but that genus had been subjected to rectification later, and Willdenow in his *Enumeration of Plants*, p. 256, gave it the name of *Adenandra uniflora*. Some of the older growers in this country knew it under the name of *Adenandra uniflora*, and a very hairy variety of it was cultivated in gardens under the name of *A. villosa*. The flowers are so large and sprightly that the plant would be sure to find favour in gardens to-day were it sufficiently hardy to be grown in other parts of the country besides Cornwall. In *Flora capensis*, Vol. I., p. 388, the flowers are described as white within and purple without, without any reference to the brownish purple lower half of the midrib. It is figured in the *Botanical Magazine*, t. 273. *J. F.*

Double Stocks.—I read, with more than usual interest, the leading article (p. 445) on this subject, not because my knowledge can be of the slightest value, but because it affords me an opportunity to place before the readers of *The Gardeners' Chronicle*, the most authoritative tribunal with which I am familiar, a theory held by my father, the late John Wright, V.M.H. His most intense interests, as his still living friends will easily remember, leaned far more in the direction of fruits and vegetables than of flowers, and so far as lies within my ken he made no experiments in this matter himself. He used to say (it has come to my ears repeatedly) that the finest strains of "double" Stocks were selected annually from single blossoms whose petals exceeded the normal number; he proceeded that if the rigidity of selection were carried beyond a given point it ended in entire loss of the strain because seeds resulted producing exclusively double flowers, which produced no seeds. He quoted as his authority an eminent Scottish grower of East Lothian Stocks of the sixty-seventies of last century whom I did not know, of course, and whose name has vanished from my mind. It was impossible for me to gain confirmation of this in my day of somewhat indirect association with flower seed production when the choicest strains of Stocks came from Germany, and I came to regard it more or less as a "traveller's tale." I do not like, however, to miss this chance of asking whether it is familiar to anyone else. *H. J. W.*

PUBLIC PARKS AND GARDENS.

THE Urban District Council of Walton-on-Thames have decided to purchase five-and-a-quarter acres of the meadows adjoining Elm Grove for £850 for a recreation ground.

A COMMITTEE, headed by the Archbishop of Canterbury, has been formed to acquire Norwood Grove, near the Rookery, on Streatham Common, for the public. The cost will be approximately £16,000, towards which the Croydon Corporation has voted £2,000, and promises to maintain the land as a public park.

A NEW recreation park, gifted by an anonymous donor to Dunbar, was opened recently. A large gathering attended, and the park was opened by Mrs. Aitken, wife of Provost Aitken, who was presented with a key. Provost Aitken expressed the warm thanks of the community to the anonymous donor who had given the purchase price of the park.

MANCHESTER CORPORATION PARKS COMMITTEE has decided to make a park of thirty-three acres at Barlow Moor End, Chorlton.

SOCIETIES.

CHELTENHAM FLORAL FÊTE.

JUNE 24 AND 25.—The third of the new series of horticultural exhibitions was held in the Montpelier Gardens, Cheltenham, on the above dates, and opened in civic state by the Mayor and Councillors. It was a considerable advance upon the two previous shows and gave promise of future developments that may bring the Cheltenham Floral Fête into the front rank of provincial shows. Cheltenham is a delightful town and its abundant trees along wide roads and gardens are a very real attraction. The town has a world-wide horticultural reputation for the names of Cypher and Cheltenham are inseparable, consequently it is only fitting that the Corporation should support the efforts now being made to make the horticultural exhibition one of the great attractions of the summer season.

The Montpelier Gardens, almost in the centre of the town, provide a suitable and convenient site for the floral fêtes, but if the tents could be placed on the grass instead of the roadway, the conditions would be greatly improved. Under the auspices of the Cheltenham Chamber of Commerce and Traders' Association a schedule of twenty-four classes was provided and good prizes offered. Mr. John Cypher is chairman of the Flower Show Committee, and he is admirably supported in all his efforts to bring the Cheltenham Show into more than local prominence. In addition to the prizes offered to competitors two handsome cups are offered for the best exhibits in the show. One of these, the Cavendish Cup, presented by Messrs. Cavendish House, was offered for the first time last year, and was won by Messrs. J. CYPHER AND SONS; it has to be won three times in all to become the property of an exhibitor.

This year the Corporation presented a very fine Silver Challenge Cup for the premier exhibit in the show, and this was won by Messrs. J. CYPHER AND SONS with a delightfully artistic display of *Codiaeums*, Palms, Orchids in variety, Ferns, Begonias, Fuchsias, Hummers, Lilliums, and the many other subjects this firm groups in such happy fashion at many of the great shows in the country. The Cavendish Cup was awarded to the next best exhibit, staged by Messrs. ALEX. DICKSON AND SONS, Newtownards, who had a fine display of Roses and of Sweet Peas. In addition to the Cup, Messrs. J. CYPHER AND SONS were awarded a large Gold Medal, and a similar award was made to Messrs. SUTTON AND SONS, Reading, for their very pretty exhibit of Sweet Peas, Canterbury Bells, Poppies, and Sweet Williams, while Messrs. A. DICKSON AND SONS received two Gold Medals—one for Roses and one for Sweet Peas.

LADIES' CLASSES.

Two classes were provided for dinner-table decorations, but in one of these Sweet Peas only were allowed. In this class there were sixteen competitors and the premier award was made in favour of Mrs. E. C. HEAD, Bishops Cleeve, who used pink and a few mauve Sweet Peas; Mrs. J. NIXON, Alderley Edge, Cheshire, was placed second; Miss E. L. JONES, Greenmount, third. A table which attracted our attention was arranged by Mrs. R. DAVIS, who used a fancy rose and blush variety named Mrs. John Curwen; this exhibit was highly commended.

In the table decoration class in which any kinds of flowers were allowed, there were no fewer than eighteen competitors and their exhibits were arranged in the Concert Room. It is hardly fair to allow Orchids to come into competition with other flowers, because their grace of form and beauty of colour place other subjects at a disadvantage; we hope a special class will be provided for designs which include

Orchids. Mrs. J. NIXON won first prize and the silver vase with a light and pretty arrangement of Laelio-Cattleyas, Yellow Iris, *Mimulus glutinosus*, and *Origanum Dietamnus* were pleasingly associated with fern fronds and sprays of *Selaginella*. Second prize fell to Mrs. T. J. BATES, Little Herberts, for a capital arrangement in which the chief subjects used were *Odontoglossum* sprays and *Gloriosa Rothschildiana*; Miss G. GILLETT, Dumbleton, won third prize with a slightly heavier and somewhat gaudy arrangement of *Gloriosa superba*, *G. Rothschildiana*, *Fuchsia triphylla*, *Oncidiums* and *Codiaeum* leaves; fourth, Miss AXTON, Withington, with blush Carnations.

The competition throughout the decorative classes was very keen. Eleven competed in the class for a basket of flowers, Mrs. J. NIXON leading with an effective arrangement of various Orchids, sprays of *Saxifraga* and small heads of a crimson-scarlet Sweet William; second, Miss G. GILLETT, with blush Carnations, and Miss BUTLER, Elm's Court, third, with yellow and heliotrope Carnations. Mrs. M. K. MARSDEN, Leckhampton, led in the class for a vase or bowl of Roses; second, Mrs. GRAHAM, Borrowdale; third, Miss G. BOWLD, Greenmount; fourteen entries. The best of eight baskets of Roses was the one shown by Miss C. PEARCE; second, Mrs. A. J. COLLISES; third, Mrs. J. NIXON. The competition was so keen in these ladies' classes that very much more space was needed to give this section the prominence it deserved and to show the individual exhibits to advantage.

Groups and Plants.

Three exhibitors came forward to compete for the prizes in a class for a group of miscellaneous plants arranged on a space of one hundred square feet. The first prize, including the Sandringham Bowl, was won by Mrs. E. V. BUTLER, Twynning Park, who had profited by the many groups she had seen staged by Messrs. J. Cypher and Sons, for her graceful exhibit, just a trifle crowded, was composed of well-grown Palms, *Dracaenas*, *Humeca elegans*, *Anthuriums*, *Phyllanthus*, *Laelio-Cattleyas* and *Odontoglossums*, with a ground work of small *Begonias*, Ferns, and other suitable plants; second, Mr. H. BAGNELL, South Park, who produced a bold effect with *Statice profusa*, *Celsia cretica*, and *Pelargoniums*, but it was a rather heavy group; third, Mr. S. HARFORD, The Grange, who showed principally *Begonias* and regal *Pelargoniums*.

Mr. H. BAGNELL led for six stove or greenhouse plants, with three large zonal *Pelargoniums* and three specimens of *Statice profusa*; second Mrs. E. V. BUTLER who showed one *Begonia* and five *Hydrangeas*. Mrs. BUTLER showed the best half-dozen Ferns in pots.

Cut Flowers.

There were three capital displays of hardy flowers, including annuals and Roses, arranged for effect on a table space twelve feet by three feet. Miss FAWKES, The Red House, won first prize with a pleasing arrangement of modern varieties of many old garden flowers, notably Canterbury Bells, Marigolds, Lupins, Violas, Sweet Williams, Delphiniums, Pansies, Poppies, Campanulas, Nepeta, and Saxifrages. Mr. B. H. BOWERS, Junior School House, gained second prize with an exhibit not far behind the first, and his chief subjects were Canterbury Bells, *Anchusa*, *Antirrhinums*, and Delphiniums; third, Mr. H. BAGNELL.

Mrs. J. CHAPMAN, Windybrake, showed the best six vases of hardy garden flowers, with Irises, Delphiniums, Liliuns, Paeonies, Campanulas, and *Antirrhinums*; second, Mrs. E. V. BUTLER, with *Anchusa*, *Thalictrum*, and Geum in good condition; third, Miss G. M. PEARCE, Oakleigh. Delphiniums were fairly well shown, and for six vases of these showy flowers the awards were made in

this order to Mrs. E. V. BUTLER, Mrs. J. CHAPMAN, and Miss E. G. FANE, Tredington Court, Tewkesbury. Mr. J. STADDON, Ashley Manor Gardens. Mrs. J. CHAPMAN, and Miss M. D. GRAYSON won in the order of mention for three vases of Delphiniums. The Delphiniums and the five sets of six vases of Canterbury Bells made a brave show. In the latter class, Mr. B. H. BOWEN was easily first with splendid spikes of lovely flowers; second, Mr. J. STADDON; third, Mr. C. F. LEIGHTON, Harp Hill.

The dozen vases of decorative Roses formed a good class, but would have been of greater interest and educational value had all the varieties been labelled. Five competitors came forward, and Mr. W. H. SMITH, Hillmorton, won the chief award with good, fresh blooms of Independence Day. Mrs. Herbert Stevens, Mme. Melanie Soupert, and Golden Emblem; second, Mrs. HOPCRAFT; third, Mrs. G. LAWRENCE. For six vases of Roses, Mrs. GRAHAM won first prize, Mr. LAWRENCE second, and Mrs. STADDON third.

Mrs. THORPE, Hucclecote, Gloucester, showed a superb dozen vases of Sweet Peas, twenty stems in a vase, and easily won first prize among five competitors with very fine specimens of Charming, Constance Hinton, Elegance, Warrior, Mammoth, Valentine, Felton's Cream, Rosabella, Powerscourt, Sunproof Crimson, Helen, and Cynthia; second, Mr. F. J. CASHNELLA, Bath; third, Mr. J. BATE. Mrs. THORPE continued her success in the class for six vases of Sweet Peas, showing equally fine flowers of Royal Purple, Matchless, Wizard, Rowena, R. F. Felton, and Comrade; second, Mr. F. J. CASHNELLA; third, Major WHITLEY, Western Lawn.

For six vases of Carnation blooms, Mr. E. V. BUTLER won first prize with excellent flowers.

AWARDS TO NON-COMPETITION DISPLAYS.

The non-competitive displays were numerous and in most cases they were extensive, attractive, and interesting.

Cheltenham Corporation Cup.—Messrs. J. CYPHER AND SONS.

Cavendish Cup.—Messrs. ALEX. DICKSON AND SONS.

Large Gold Medal.—To Messrs. J. CYPHER AND SONS and to Messrs. SUTTON AND SONS.

Gold Medal.—To Messrs. ALEX. DICKSON AND SONS, one for Roses and one for Sweet Peas; Messrs. E. WEBB AND SONS, Sweet Peas, etc.; Messrs. ENGLISH, for Roses; Messrs. BLACKMORE AND LANGDON, for Delphiniums and *Begonias*; Mr. J. STEVENSON, for Sweet Peas; Messrs. BOWLES AND SKARRATT, for a Lily pool; and Messrs. J. PEED AND SONS, for *Caladiums*, *Gloxinias*, and *Streptocarpuses*.

Silver-gilt Medal.—To Mr. C. ENGELMANN, for Carnations; Messrs. HOPWOODS, hardy flowers; Mr. W. WELLS, JUNR., Delphiniums; Messrs. YATES AND SONS, Gladioli and Poppies; THE GLOUCESTER CO-OPERATIVE ASSOCIATION, fruits and vegetables; Mr. WALTERS, Colesborne Gardens, for new or rare hardy plants; and Messrs. M. PRICHARD AND SON, for hardy flowers.

Silver Medal.—To Mr. BECKETT, Roses; Messrs. FRANK CANT AND CO., Roses; Messrs. HEWITT, Delphiniums; Mr. BOX, Roses; Mr. BASFIELD, miscellaneous; Messrs. BOWLES AND SKARRATT, alpinas; Messrs. RICH, Delphiniums; Messrs. BAKERS, Delphiniums; Messrs. MAXWELL AND BEALE, alpinas; Mr. C. MUSGRAVE, miscellaneous; Mr. H. CLARKE, Violas; and Messrs. COVILLE AND CO., *Hydrangeas* and Lilies.

A special commendation was made to the LONG ASHTON EXPERIMENT STATION for a very interesting and educational exhibit, showing the results of manurial experiments, and examples of Silver Leaf, Red Plant, and other diseases of fruit crops.

ROYAL HORTICULTURAL.

Amateurs' Show.

THE Amateurs' show held at Vincent Square on June 30 and July 1 was not the success its many well-wishers anticipated, nor was it the failure certain folks hoped for. Why the Council of the Royal Horticultural Society did so little to advertise this new venture it is difficult to realise, particularly as the vast number of its Fellows are amateurs, upon whom the trade depends for a living. Ever since Mr. H. B. May suggested a show for amateurs only there has been a "neither hot nor cold" atmosphere around it, therefore, remembering the difficulties arising as a consequence of the heat of "flaming June," the exhibition was as good as could be expected.

The schedule provided forty-two classes, but in only a few of these was the competition keen. So far as we could gather only two members of the R.H.S. Council—Sir William Lawrence and Mr. Reginald Cory—contributed exhibits. Several Fellows, fairly well known in horticultural circles, were somewhat severe in their criticism of the show, but they evidently lacked the pluck or the material necessary to assist in making the show a success. The old, old story was oft repeated, "we could have won easily if we had shown." Alas! the plants and flowers left at home do not make a show.

Some of the exhibitors showed more pluck than skill both in the cultivation and arrangement of their exhibits, but the experience gained should be helpful to them. In certain classes the exhibits were no better, indeed, not so good as may be seen at many a local show. Some entrants failed to fulfil their obligations, consequently there were many bare table spaces, but, even so, two or three assistants could have spaced out the exhibits which did materialise, to the advantage of the exhibits and the show. There was ample time for some amount of re-arrangement, seeing that judging was finished by about 10 a.m., and the show was not open to the public until 1 o'clock. Unfortunately, the cards notifying the medal awards to amateurs' non-competitive displays had not been placed on the exhibits by the opening time, nor were there cards notifying the ownership of these exhibits, except where the exhibitor had provided his own. Such delay and lack of interest are unworthy of the Royal Horticultural Society.

Hardy Flowers.

The first six classes in the Schedule were devoted to Roses, and these, considering the season, were of more than average quality. In the class for twelve vases of T. or H. T. varieties, W. L. WETTERN, Esq., Oxted Place, Oxted, Surrey, won the first prize with admirable vases of such varieties as Lady Inchiquin, Avoca, George Dickson, Mrs. Wemyss Quinn, Willowmere, and La Champagne. Mr. G. A. HAMMOND, Silvercroft, Burgess Hill, who was second, had rather more colour in his collection, and this was provided by J. G. Glassford, Sunstar, and Francis Gaunt. Mr. T. EVANS, Reading, in his third prize collection had beautifully coloured blooms of Golden Emblem.

The first prize exhibit of six vases of similar varieties shown by the Rev. F. R. BURN-SIDE, Great Starbridge Rectory, Essex, was even better than the foregoing. His blooms were of Madame Melaine Soupert, Dean Hole, W. R. Smith, and White Maman Cochet. Mr. C. P. MAN, Benthall, Merston, was second.

There were no exhibits of six vases each of Rambler Roses in sprays or of any Roses other than Tea, H.T., and Rambler, and only Mr. A. T. SUTTON, Oldfield House, Ditchling, Hassocks, showed three vases of Ramblers, for which he was awarded the second prize, while in the class for three

vases of any Roses other than those specified the Rev. F. J. BURNSIDE was awarded the first prize for excellent vases of Louise Crette, Hugh Dickson, and Coronation.

Delphiniums filled a considerable space, and while the prize-winning spikes were very creditable, some of the exhibits were scarcely worthy of the occasion. In the class for twelve vases both H. K. FARNELL, Esq., The Elms, Acton Hill, and F. C. STOOPE, Esq., West Hall, Byfleet, who were first and second respectively, showed all seedlings, and these illustrated a pleasant range of colouring. E. H. BLAKESLEY, Esq., Fairlawn, Redhill Common, was an easy first with six vases, and he included King of the Delphiniums, Mrs. W. Wells, and Lady Hammick. Mrs. G. M. LEWIS, Sawyers, Brentwood, who was second, had two fine vases of Madonna seedlings.

Sweet Peas were the best section in the show. The classes were well filled and the many vases presented a bright and attractive appearance. In most of the classes the competition was very keen and the judges must have had considerable difficulty in making their awards. There were eight collections of twelve vases, distinct, and the best was shown by R. W. WHITEHEAD, Esq., Hillside, St. Albans, who had excellent vases of Orchid, Charity, Jean Ireland, Matchless, Sunset, and Warrior in his exhibit. The second prize winner F. CHURCHWARD, Esq., Dacombe, Newton Abbot, had gloriously coloured vases of Tangerine Improved and Royal Sovereign, and his vases of Mrs. Tom Jones, Wild Rose, and Mrs. Arnold Hitchcock were also admirable. The third prize blooms of Mrs. HOBART TYLER, Merton House Hotel, Reading, were especially noteworthy for their colour and substance of petal. Her varieties included Charming, Hawlmark Pink, and Pimpernel.

The same high quality was continued in the class for six vases, where CAPT. GEORGE YOUNG, The Old House, Swallowfield, Berks. was first with splendid vases of W. J. Unwin, Majestic, Grenadier, Youth, Warrior, and Mrs. Tom Jones. LT.-COL. H. L. SCOTT, Hawthorn Lodge, Bracknell, was a very good second, and he included La France, Brilliant, Austin Frederick Improved, and Adelaide. The vases of three varieties were not quite so good as in the larger classes. The first prize was won by CAPT. R. A. BARNEY, Faversham, who showed Charming, Royal Scot, and Powerscourt, while W. RENN, Esq., Clewer, was a close second.

It is rather early for Gladioli, which were shown by only two exhibitors in the class for three vases. J. FAIRLIE Esq., Mayfield Road, Acton, was first with good spikes of Alice Kennedy, White Giant, and Snow Wreath, three large-flowered varieties.

There was a pleasant variety of cut herbaceous flowers. In the class for twelve vases the first prize was won by L. DE ROTHSCHILD, Esq. (gr. Mr. A. Bedford), Exbury, Hants., who included *Lilium umbellatum*, *Funkia Fortunei*, and *Rhazya orientalis*, an uncommon hardy evergreen introduced from Greece in 1889. It is of slender habit and has much the appearance of a small-flowered Periwinkle. The bright blue flowers are produced over a considerable period. The second prize was awarded to F. C. STOOPE, Esq.. The class for six vases of herbaceous flowers was poorly represented.

Flowering Shrubs.

For the most part the exhibits in this section were reminiscent of the collections of half-hardy shrubs seen in the warmer parts of the country.

The exhibits of twelve vases of cut sprays would have benefited by a more liberal allowance of space, as they all were too crowded to display their beauties fully. The first prize and *The Gardeners' Chronicle* medal were won by LIONEL DE ROTHSCHILD, Esq., who included well-flowered sprays of *Buddleia alternifolia*, *B. Colvillei* (a good dark form), *Leptospermum Boscawenii*, *Helichrysum*

rosmarinifolium, *Carpenteria californica*, *Escalonia Donard* Seedling, *Zenobia pulverulenta*, and *Philadelphus Virginale*. In the second prize collection shown by LT.-COL. STEPHENSON CLARKE, Borde Hill, Cuckfield, there were admirable sprays of *Abelia floribunda*, *Leptospermum Nairnii*, *Magnolia parviflora*, and *Benthamia fragifera* (*B. capitata*). Sir WM. LAWRENCE, Burford Lodge, Dorking, showed *Rosa Moyesi*, *Solanum crispum*, and *Ononis fruticosa* in his interesting collection. R. CORY, Esq., Duffryn, Cardiff, included *Viburnum cylindrica*, and F. C. STERN, Esq., Highdown, had a good selection of shrubby Veronicas.

Stove and Greenhouse Plants.

The spaces allotted to the exhibitors did not render the task of arranging their groups of plants too easy, but they overcame the difficulties in a praiseworthy manner. A. P. BRANDT, Esq. (gr. Mr. J. W. Barker), Blethingley Castle, arranged an attractive group of *Lilium longiflorum*, brightly coloured Crotons, graceful Palms, Hydrangeas, and other plants, and won the first prize. C.



FIG. 9.—SILVER CUP presented by the Proprietors of *Amateur Gardening* and offered for competition at the R.H.S. Amateurs' Show. Won by Mr. A. T. Sutton, Ditchling, Hassocks, who gained the largest number of points.

LANGMAN, Esq., who was second, had Crotons, Caladiums, Crassulas, Gloxinias, and Cocos Weddelliana of good quality.

A very fascinating little group of *Cereus senilis*, *C. Spachianus*, *Echinocactus Grusonii*, *Mamillaria Parkinsonii*, *M. senilis*, *Gasteria Bayfieldii*, and other succulents was shown by R. CORY, Esq., and was awarded the first prize.

The best twelve pot plants were shown by A. P. BRANDT, Esq., who included *Aralia elegantissima*, *Pandanus Veitchii*, and *Dracaenas*. Sir WILLIAM LAWRENCE, in his second prize collection, had *Russelia Lemoinei*, *Zephyranthes carinata*, *Cypripedium Dominianum*, and a delightfully well-coloured plant of *Begonia Versailles*. C. LANGMAN, Esq., who showed *Coleus*, *Caladiums*, and *Pandanus*, was first with six pot plants; second J. H. TUCK, Esq., Cookham Rise.

The best six vases of Carnations, shown by R. MORTON, Esq., Grange Dene, Woodside Park, included Sam Weller, Linkman, Elaine, and Mary Murray. In the class for three vases, equal first prizes were awarded to J. FAIRLIE, Esq., and F. J. CASHNELLA, Esq., Bath, for admirable vases. The only collection of border Pinks was shown by R. MORTON, Esq.

The first prize, six Ferns grown under glass, were shown by C. HENWOOD, Esq., Maida Vale, and included admirable plants of *Asplenium Trichomanes trogyense*, *Polystichum angulare nitescens*, and *Blechnum spicant trinervium coronans*.

Violas were a popular class, and A. E. GERMAN, Esq., Hornchurch, was first, and F. W. WILSON, Esq., Meadowbank, Keilston, was second for six vases.

For twelve pots of Orchids the premier award went to H. T. PITT, Esq., Stoke Newington, who was the only exhibitor, and included capital examples of *Laelio-Cattleya Anzac*, *Miltonia Wm. Pitt*, *M. Hyeana*, *Odontonia Corona*, *Odontoglossum crispum*, and *O. Wilkeanum* in a fine collection. For six Orchids Mr. A. T. COOK, Ditchling, led with *Odontodia Lutetia* with three spikes, *Miltonia vexillaria*, *Epidendrum vitellinum majus*, and a good *Laelio-Cattleya*; second, Mr. A. GENTLE, who included a good example of *Lycaste aromatica*.

The class for the best new plant introduced since 1914 brought forth a number of *Rhododendrons*, not in flower, but the Gold Medal was awarded to LIONEL DE ROTHSCHILD, Esq., for a large vase of *Buddleia alternifolia*, the graceful Chinese species which received an Award of Merit on June 27, 1922. F. C. STERN, Esq., received the Silver-gilt Flora Medal for a good vase of *Indigofera amblyantha*.

Non-Competitive Exhibits.

Immediately inside the entrance, MAJOR PAM (gr. Mr. F. Streeter), Wormley Bury, Broxbourne, displayed a well conceived water garden in three linked pools of *Nymphaeas*, surrounded by Bamboos, Sedges and Grasses, Japanese Irises, Spiraeas, and Ferns (Silver-Gilt Banksian Medal).

An extensive collection of well-grown hardy Ferns was contributed by W. B. CRANFIELD, Esq., East Lodge, Enfield Chase. He had a great many rare and interesting varieties of *Scolopendrium*, *Polystichum angulare*, *Athyrium Filix-foemina*, and *Osmunda regalis*, with *Lastrea uliginosa*, and *L. dilatata* (Gold Medal).

An unique collection of Cotyledons was displayed by R. CORY, Esq., and this included *Cotyledon metallica* and its variety *crispa*, *C. agavoides*, *C. Funkia*, *C. atropurpurea*, and *C. canaliculata* (Silver-Gilt Banksian Medal).

LT.-COL. MESSEL (gr. Mr. J. COMBER), Nymans, Haywards Heath, set up an excellent collection of hardy shrubs. He included *Olearia semidentata*, *Leptospermums* in variety, *Cornus capitata*, *Escallonia*, *Phlomis fruticosa*, *Indigofera gerardiana*, *Ozothamnus rosmarinifolius*, and *Philageria Veitchii*, the hybrid between *Philesia buxifolia* and *Lapageria rosea* (Silver-Gilt Banksian Medal).

Two capital displays of Orchids were made and added interest and beauty to the other exhibits. Sir JEREMIAH COLMAN, Bt., (gr. Mr. J. Collier), Gatton Park, Reigate, contributed a very well arranged group, in which *Thunias* were conspicuous, these forming a graceful background for good plants of *Laelio-Cattleya Canhamiana*, *L.-C. Martineti*, *Miltonia vexillaria*, *Cypripedium Curtisii* *Sanderæ*, *C. Godefroyae leucochilum*, and the showy and rare *Eria ornata*, besides other attractive species (Gold Medal). Mr. H. T. PITT (gr. Mr. Thurgood), Stoke Newington, showed many very interesting Orchids including *Chondrorhyncha Chesteronii*, *Masdevallia muscosa*, *Vanda Miss A. Joaquim*, *Renanthera Imschootiana* *Miltonias*, *Odontoglossums*, *Cypripedium barbatum*, and *C. Stonei* (Silver-Gilt Banksian Medal).

An interesting series of *Lilium* hybrids was contributed by R. O. Backhouse, Esq., Sutton Court, Hereford, together with spikes of *Lilium pardalinum*, *L. regale*, *L. croceum*, *L. giganteum*, *L. Hansonii*, and *L. monadelphum*, which made a very attractive exhibit (Silver-gilt Banksian Medal).

Near by there was a large collection of well-grown pot plants of what appeared to be forms of *Lychnis Arkwrightii*, exhibited by J. S. ARKWRIGHT, Esq., Presteign. The group possessed considerable attractions, and illustrated an admirable strain. (Bronze Banksian Medal).

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, JUNE 19.—Committee present: Captain W. Horridge (in the chair), Messrs. A. Burns, A. Coningsby, D. A. Cowan, J. Cypher, A. G. Ellwood, J. Evans, G. Giles, E. W. Thompson, and H. Arthur Secretary).

FIRST-CLASS CERTIFICATE.

Odontoglossum crispum Pearl McBean.—A white, well-formed flower with fimbriated segments. From Mrs. GRATRUX.

AWARDS OF MERIT.

Cattleya Mendelii Duchess of York.—From Mrs. GRATRUX.

Odontoglossum Joyce (President Poincaré × *Georgius Rex*).—From A. HANMER, Esq.

GROUPS.

S. GRATRUX, Esq., West Point (gr. Mr. C. Branch), staged a group to which a Silver-gilt medal was awarded.

A Silver-gilt Medal was also awarded to A. HANMER, Esq., Buxton (gr. Mr. G. Giles), for a miscellaneous group.

ANNUAL MEETING.

The annual general meeting was held on the same date, Captain W. Horridge presiding. The report and balance sheet were submitted and adopted. Captain Horridge was re-elected president and the Executive Committee unanimously re-appointed *en bloc*. The Awards Committee was also re-appointed, with the additional nomination of Mr. D. McLeod to the nurserymen, and Mr. C. Branch to the gardeners, both of whom will be voted for.

Prizes were presented to the successful competitors as follow:—Mr. J. J. Bolton's prize to Mrs. BRUCE and Miss WRIGLEY (gardener's prize to Mr. A. Burns); Messrs. Sanders' prize to A. HANMER, Esq. (gardener's prize to Mr. G. Giles); Botanic Society of Manchester's Silver-gilt Medal to Mr. A. BURNS, and the Society's Silver Medal to Mr. G. GILES; Messrs. Charlesworth and Co.'s prize to P. SMITH, Esq. (gardener's prize to Mr. E. W. Thompson); Messrs. Cowan and Co.'s prize to S. GRATRUX, Esq. (gardener's prize to Mr. C. Branch); Messrs. Cypher and Co.'s prize to Mrs. BRUCE and Miss WRIGLEY (gardener's prize to Mr. A. Burns); Mr. and Mrs. S. Gratrux's prize to A. HANMER, Esq. (gardener's prize to Mr. G. Giles); Mr. J. Evan's prize to S. GRATRUX, Esq. (gardener's prize to Mr. C. Branch); Messrs. Keeling and Son's prize to Mrs. GRATRUX (gardener's prize to Mr. C. Branch); Mr. A. Hanmer's prize to S. GRATRUX, Esq. (gardener's prize to Mr. C. Branch); Mr. D. Losh Thorpe's prize to A. HANMER, Esq. (gardener's prize to Mr. G. Giles); Mr. P. Smith's first prize to Mr. A. BURNS, second prize to Mr. C. BRANCH, and third prize to Mr. G. GILES.

Obituary.

James D. Loney.—One of the leading men in the gardening profession in the west of Sweden, Mr. James D. Loney, of Overas, passed away at Ekman's Hospital, at the age of eighty-six years, on May 30th. Born in Fifeshire, on October 2nd, 1838, Mr. Loney received his first training in gardening at Fingask Castle, then renowned for successful fruit cultivation. His training comprised periods spent at several gardens, including those at the Crystal Palace, London, and Leybourne Grange, Kent. In 1864 he was invited to Sweden by Mr. James Dickson to take over the Dickson Gardens at Overas. Here he remained for sixty years, and had the pleasure of witnessing the fine results of his early labours. At Overas, Mr. Loney created an establishment until then unheard of in Sweden, and one which received wide recognition in horticultural circles. In

addition to nine glasshouses, Palm houses and other hot houses were erected, the last for the cultivation of vegetables during the cold, winter period, and many rare trees were planted in the park. The Gothenburg Gardens are a fine memorial to Mr. Loney's skill, for, at the request of Director Löwezren, he purchased in England and brought to Sweden the large Palm house which is still such an important feature of the Gothenburg Gardens. He was also one of the founders of the "Friends of Horticulture," of which society he was an honorary member. It is of interest to record that the Gold Medal of the Royal Horticultural Society was awarded to Mr. James D. Loney for a collection of fruits on October 2nd, 1877. Mr. Loney is survived by his widow, one daughter, and two sons; one of the latter is resident in Sweden and the other in England.

Robert Veitch Mather.—We regret to announce the death of this well-known border seedsman which took place on Thursday, the 25th ult. Deceased, who had reached the age of seventy-one, was a native of Edinburgh and began business in partnership with Mr. Thomas Laing, as seedsmen and nurserymen at Kelso, over forty years ago, and during that period and especially since its amalgamation with Messrs. Stuart and Mein, the firm enjoyed a large share of public patronage, and as the result of its activities in matters pertaining to horticulture, agriculture, and arboriculture, had the distinction of being appointed seedsmen to the King. The success of the business was largely due to Mr. Mather's enterprise and knowledge of grasses, of which he was an acknowledged authority. He was credited with the introduction of the Wild White Clover, or at any rate with its popularisation in the Border district. He was both an aid to and a critic of the grass seed investigations made by Mr. R. H. Elliot of Clifton Park, and tenanted for some time the large pastoral farm of Ellemford, in Berwickshire. Mr. Mather, who died in a nursing home after a brief illness, leaves a widow and grown-up family of two sons and a daughter to mourn his loss.

ANSWERS TO CORRESPONDENTS.

DOUGLAS FIR TREES LOSING THEIR LEAVES. *K. D.* Under normal conditions young Douglas Fir trees should not shed their leaves after transplanting. The recent spell of dry weather may have caused newly-planted trees to shed their leaves, or leaf shedding may have been brought about from some other cause. Without examining the trees it is not possible to say whether the specimens are alive and likely to recover. It would, however, be unwise to pull them up unless upon examination they are found to be dead. The leaves may have fallen and the wood be quite fresh. In such a case new leaves may be expected so soon as sufficient rain falls to thoroughly moisten the ground. As the trees were planted in January they ought to have begun to form new roots before the drought set in. On the other hand, the ground may have been very wet and cold, thus causing the death of roots.

HORTICULTURAL EXAMINATIONS: *Anxious.* Write to the Secretary, Royal Horticultural Society, Vincent Square, Westminster, for full particulars. The British Gardeners' Association is no longer in being.

IXIAS: *J. H. P.* It is very doubtful if there are any species of (1) *Ixia* in cultivation, with the exception of *I. viridiflora*, and *I. speciosa*, which is generally sold as *I. crateroides*. Some of the species are *I. candida*, *I. columellaris*, *I. flexuosa*,

I. maculata, *I. monadelpha*, *I. patens*, and *I. polystachya*; there are, however, many others, some of them included under the sub-genus *Morphixia*. (2) *Ixias* are found distributed over South Africa, and grow under the conditions common to other South African bulbous plants. (3) It is only possible to obtain corms of the uncommon species by getting some one in South Africa to collect them. There are many beautiful named garden varieties in cultivation; Messrs. W. Mauger and Sons, Guernsey; Mr. F. Lilley, St. Peter's, Guernsey; and Mr. C. G. van Tubergen, junr, Zwanenburg, nurseries, Haarlem, Holland, offer many fine, named varieties. In the south of England *Ixias* may be grown outdoors successfully on warm south borders in front of warm walls. In the Royal Botanic Gardens, Kew, a bed of them in the open, in a sheltered position, has been in flower for several weeks. They are usually planted about the end of October or beginning of November, in warm, well-drained soil, and they usually come safely through the winter. In cold districts it may be advisable to give some protection in cold weather. If grown in pots *Ixias* should be potted about the middle of October, placing six corms in a five-inch pot; they are best grown in cold frames, or a cool greenhouse, perfectly cool conditions being essential; in short, they should be given the same treatment as *Freesias*.

NAMES OF PLANTS: *C. L. C.* 1, Weigela rosea; 2, Spiraea ariaefolia; 3, Ginkgo biloba. *J. G. R.* Anthericum Liliastrium. *J. S. Allium* Moly. *E. E. E. I.* Escallonia macrantha; 2, send when in flower. *Chau.* 1, Cedrus Deodara; 2, Cupressus Lawsoniana var. lutea; 3, C. L. var. juniperina; 4, Juniperus communis; 5, Fabiana imbricata; 6, Melilotus officinalis. *J. T. S.* Senecio Grayii.

RICHARDIA ELLIOTTIANA: *C. R.* We cannot tell why your *Richardias* do not flower successfully, as your treatment seems correct in every respect. Good, strong tubers are essential, and in our experience they do not last many years in good condition, so it may be desirable for you to make a fresh start with new stock. It is possible yours is a poor flowering stock, although the plant usually succeeds quite well when raised from seed. Old tubers have a tendency to develop a number of weak growths, instead of one strong growth, and it is wise to rub off the weak shoots and allow the strong central growth to develop. When potting, it is best to little more than half fill the pot, afterwards adding a rich compost as the roots increase.

TOMATOS DISEASED: *A. S. W.* Your Tomatos are attacked by the fungus known as black rot. It is believed that this fungus gains an entrance to the fruit through minute cracks in the skin. An excess of water would cause the fruits to crack and thus fall a ready prey to this disease. All diseased fruits should be removed and burnt and the plants sprayed occasionally with potassium sulphide, especially when they are setting their fruits. The ventilators in the house should be opened on all favourable occasions, but care must be taken to prevent an excess of moisture in the atmosphere.

Communications Received.—H. W. D.—E. A. G.—J. R. M.—W. M.—D. and R.—E. G.—J. A. K.—B. M. T. L.—Dr. D.—W. F. B.—R. F.—E. S. S.—W. A.—T. S.—J. W. B.—O. F.—J. W. D.—T. W. T.—R. C. C. E. H. W.

ENQUIRY.

A CORRESPONDENT writes asking for the name of the nurseryman who exhibited "a new climbing pink Abutilon" at the recent Chelsea show. If anyone can send us information our correspondent will be greatly obliged.

MARKETS.

COVENT GARDEN, Tuesday, June 30th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum cuneatum per doz.	10 0-13 0	Hydrangea —Blue, 48's per doz.	30 0-48 0
—elegans ...	10 0-12 0	Marguerites, white, 48's per doz.	15 0-18 0
Aralia Sieboldii ...	9 0-10 0	Mignonette, 48's per doz.	15 0-18 0
Araucarias, per doz.	30 0-42 0	Nephrolepis, in variety ...	12 0-18 0
Asparagus plumosus ...	12 0-18 0	—32's ...	24 0-36 0
—Sprangeri ...	12 0-18 0	Palms, Kentia ...	30 0-48 0
Aspidistra, green 36 0-60 0		—60's ...	15 0-18 0
Asplenium, per doz.	12 0-18 0	Pteris, in variety ...	10 0-15 0
—32's ...	24 0-30 0	—large 60's ...	5 0-6 0
—nidus ...	12 0-15 0	—small ...	4 0-5 0
Cacti, per tray, —12's, 15's ...	5 0-7 0	—72's, per tray of 15's ...	2 6-3 0
Crassulas, 48's per doz.	24 0-30 0	Rhodanthe, 48's per doz.	8 0-10 0
Crotons, per doz.	30 0-45 0	Roses, Polyantha, 48's per doz.	18 0-24 0
Cyrtomium ...	10 0-25 0	Verbenas, 48's, per doz.	12 0-15 0
Hydrangea White, 48's per doz.	18 0-30 0	Viscaria, 48's, per doz.	15 0-18 0
—Pink, 48's per doz.	18 0-24 0		

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Achillea, per doz. bun.	4 0-6 0	Lapagerias, per doz. blooms	3 6-4 0
Adiantum decorum, doz. bun.	9 0-10 0	Lilium longiflorum long, per doz.	3 0-3 6
—cuneatum, per doz. bun.	6 0-8 0	—speciosum tubum long, per doz. blooms	4 0-5 0
Alstrœmeria, per doz. bun.	15 0-18 0	—short " ...	3 0-5 0
Asparagus plumosus, per bun.	2 0-3 0	Lily-of-the-Valley, per doz. bun.	24 0 30 0
long trails, 6's med. sprays ...	1 6-2 6	Nigella, Blue, per doz. bun.	6 0-9 0
short " ...	0 9-1 3	—per doz. bun. ...	3 0-4 0
—Sprangeri, per bun.	1 6-2 0	Oreids, per doz.	24 0-36 0
long sprays ...	1 0-1 6	—Cattleyas ...	5 0-7 0
med. " ...	0 4-1 0	—Cypripediums ...	5 0-7 0
short " ...	0 4-1 0	Peonies, White per doz. bun. 6's	12 0-18 0
Carnations, per doz. blooms	1 6-3 0	—Pink, per doz. bun. 6's	12 0-18 0
Chrysanthemum maximum, doz. bun.	5 0-6 0	Pinks, Her Majesty, per doz. bun.	4 0-6 0
Coronopsis, per doz. bun.	4 0-5 0	—Mrs. Sinkins, per doz. bun.	3 0-3 6
Cornflower, per doz. bun.	2 6-3 0	Richardias (Arums) per doz.	5 0-6 0
Croton leaves, var. doz. leaves	0 9-2 6	Roses, per doz. blooms, Richmond	2 0-3 0
Delphiniums, various, per doz. spikes	2 0-5 0	—Liberty ...	2 0-3 0
Fern, French, per doz. bun.	0 9-1 0	—Madame Butterfly	2 0-4 0
Gaillardia, per doz. bun.	5 0-6 0	—Mme. Abel Chateau	1 6-2 6
Galax, American, green and bronze, per doz. bun.	— 1 0	—Melody ...	2 0-3 0
Gardenias, per box, 12's, 18's ...	4 0-6 0	—Molly Sharman Crawford	2 6-4 0
Gladioli, Blushing Bride, per doz. bun.	10 0-15 0	—Ophelia ...	2 6-3 0
White, per doz. bun.	9 0-12 0	—Sunburst ...	2 0-3 0
—Peach Blossom, per doz. bun.	9 0-12 0	Scabiosa caucasica, per doz. bun.	5 0-7 0
—primulinus, per doz. spikes	2 6-3 0	Smilax, per doz. trails	3 0-3 6
Halley, per doz. spikes	3 0-5 0	Statice, mauve ...	9 0-12 0
—Prince of Wales, per doz. spikes	5 0-6 0	Stephanotis, per 72 pips ...	2 6-3 0
—Scarlet, per doz. spikes	5 0-6 0	Stock, English white ...	9 0-18 0
—Cream, per doz. spikes	5 0-6 0	Sultan White, per doz. bun.	6 0-9 0
—Giant, White, per doz. spikes	6 0-8 0	—Mauve, per doz. bun.	8 0-10 0
Gypsophila, white, doz. bun.	9 0-12 0	—Yellow, per doz. bun.	9 0-10 0
Iceland Poppies ...	2 0-3 0	Sweet Peas, per doz. bun.	5 0-12 0
Iris, English per doz. bun.	12 0-15 0	Violas, per doz. bun.	1 0-1 6
—Blue ...	12 0-15 0		
—Mauve ...	12 0-15 0		
—White ...	12 0-15 0		

REMARKS.—All supplies of outdoor blooms have been gradually lessening during the past week and prices have advanced accordingly; present conditions point to a further rise in values during this week. Many salesmen clear their consignments long before closing time, and the general supplies are insufficient for the present demand in spite of the advanced prices. Pyrethrums have now finished; Paeonies will also be over this week. The newest arrivals in this department are Alstrœmeria and Achillea The Pearl. Fairly good supplies of indoor bloom are maintained. Carnations are as quoted last week. Roses have become considerably dearer, and supplies of best blooms are very limited. Lilium longiflorum remains at a moderate price and is good in quality. L. lancifolium album and L. l. rubrum are again obtainable, but supplies are very small at present. A good selection of Delphiniums is on sale. Clarkias and Godetias are available among the outdoor blooms. Statice sinuata in mauve, white, and yellow is gradually increasing in quantity. There are some exceptionally fine blooms of Marigolds which have met with a good demand this season. Large-flowered Gladioli, which have been arriving in fine condition, are now reduced to a few bunches and many orders cannot be supplied. Similar remarks apply to Sweet Peas. The present supplies are very medium in quality and all consignments are soon cleared.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples—New Zealand—		Lemons, Messina, per box ...	12 0-27 0
—Jonathan ...	16 0-18 0	—Murcia ...	20 0-27 0
—Sturmer ...	18 0-20 0	—Naples ...	20 0-32 0
—Statesman ...	19 0-21 0	Mandarines ...	5 0-6 0
Tasmanian—		Melons (Forced) 3 0-6 0	
—Jonathan ...	16 0-19 0	Nectarines, per doz.	12 0-36 0
—Rokewood ...	18 0-20 0	Oranges, Jaffa ...	16 0-18 0
—Sturmer ...	19 0-20 0	—Spanish—	
—Others ...	14 0-17 0	—300's ...	35 0-50 0
Bananas ...	16 0-27 6	—360's ...	30 0-50 0
Cherries, French, per box ...	1 6-2 6	—504's ...	28 0-30 0
—White, English 10 0-12 0		Peaches, English per doz.	12 0-36 0
—Black, English 12 0-16 0		Pines ...	4 0-6 6
—Dutch ...	10 0-14 0	—South African ...	7 0-8 0
Figs (Forced) doz.	3 0-12 0	Plums, Spanish, per crate ...	8 0-10 0
Gooseberries, per ½ sieve ...	5 0-7 0	Spanish Apricots—	
Grapes—		—per ½ sieve ...	10 0-12 0
—Belgian ...	1 9-2 6	—per crate ...	8 0-10 0
—English—		Strawberries—	
—Hambro, per lb.	2 0-4 0	—Southampton, 2 lb.	1 0-2 0
—Muscat ...	4 0-10 0	3 lb.	1 9-2 6
—Canon Hall ...	5 0-12 0	—Kent pecks ...	5 0-6 0
Grape Fruit, Cuban ...	40 0-42 6		
Jamaica ...	40 0-42 6		
Florida, finest ...	45 0-50 0		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans, Guernsey, per lb.	1 6-2 0	Onions, Egyptian, per bag ...	10 6-12 0
—Worthing ...	1 6-2 0	—English, per cwt. 12 6-14 0	
Beets, per cwt.	5 0-8 0	—Spring per doz.	3 0-4 0
Broad Beans, per bushel ...	2 6-4 0	Paranips, per cwt.	3 0-4 0
Cabbage, per tally	12 6-15 0	Peas, English per bushel ...	8 0-12 0
Canary Island Tomatos ...	18 0-22 6	—½ bag ...	10 0-12 0
Cauliflowers, per doz.	3 0-6 0	Potatoes, per ton—	
Carrots, new, per doz. bun.	6 0 8 0-	—Old, per cwt. ...	5 0-7 6
Cucumbers, per doz.	5 0-6 0	—English, per bushel ...	6 0-7 0
—Flats, 36's, 42's	14 0-18 0	—Canary Island ...	8 0-12 0
Dutch Onions ...	11 0-12 0	—St. Malo, per cwt.	9 0-9 6
Endive, per doz.	2 6-3 0	—New Guernsey, per cwt.	9 0-9 6
Greens, best, per bag ...	5 0-7 0	—Jersey, per cwt.	9 0-9 6
Horseradish, per bundle ...	2 0-2 6	Radishes—	
Lettuce, Cos, doz.	1 6-3 6	—Round ...	1 0-2 0
—Cabbage Lettuce, ...	2 0-3 0	Rhubarb, per doz.	6 0-7 0
Mushrooms, cups 2 0-2 6		Spinach, per bushel	6 0-7 0
—rollers ...	1 3-1 9	Tomatos, English, per lb.	8 0-8 6
Marrows, doz.	5 0-6 0	—Pink ...	8 0-8 6
		—Pink & White ...	8 0-8 6
		—White ...	7 0-7 6
		—Blue ...	6 6-7 0
		—Guernsey ...	7 0-8 0
		Turnips, new, per doz. bun.	8 0-10 0

REMARKS.—So far as the demand for fruit is concerned the fine weather is responsible for very brisk conditions, but the prolonged spell without rain is viewed with some concern by the producers of many other crops. Strawberries continue to be a leading line at a rather better price level. Apples from Australasia are not moving quite so freely, and quotations for several varieties are inclined to be easier. Choice fruits, such as Grapes, Peaches, Nectarines, and Melons are offered at high prices, yet they are selling well. Large quantities of Apricots from Spain are arriving daily and meeting a good market. Plums from the same source are also selling well. A fair sprinkling of English Cherries are coming, and generally their prices are good. Gooseberries are a rather better trade, Dutch berries not being so plentiful. Tomatos are holding their own very well, in spite of increased quantities on the market. The Cucumber trade is firm.

Salads are wanted. Mushrooms are more plentiful and cheaper. French Beans are scarce and dear, as also are Peas. New Potatoes are cheaper with plentiful supplies on offer.

GLASGOW.

THE scarcity of cut-flowers during the past week had a steady influence on prices, and the quality of the blooms was not so much affected by the weather as was the case previously. Irises were worth from 9d. to 12 per dozen; Carnations, all colours, 2/- to 4/-; Paeonies, 1/- to 3/-; Pyrethrums, 3/- to 8/-; Gladioli The Bride, 8/- to 10/-; Mar-guerites, 2/- to 2 6/-; Lilium longiflorum (Harrisii), 3 9 per bunch. Asparagus made 3d. to 13 per bunch, trails 1 6 to 2 1. Smilax was a slow sale, and realised 1 6 to 2 1. Other prices were:—Gypsophila, ordinary, 3d. to 8d., Special, 9d. to 13; Sweet Peas, 3d. to 8d. per bunch; Loun's special, 10d. for 12's, and Helensburgh, ditto, 1/- to 1 3 for 18's. Supplies of Roses were restricted to four varieties, which brought the following prices:—Madame Butterfly and Madame Abel Chateau 2 6 to 4/- per dozen, Mrs. H. Stevens 2/- to 3/-, and Richmond 2/- to 3 6.

Fewer pot plants were on sale. Spiraeas made 15/- to 18/- per dozen, Geraniums (small) 3 6 to 5/-, Ferns 3 6 to 5/-, Aspidistras (green), 12/- to 15/-, (variegated) 15/- to 18/-, Begonias in bowls 7/- to 9/-.

The fruit department was dominated by the large trade in Strawberries, which, after being down to 6d. and 7d. per lb. early in the week, improved to 9d. and 10 1/2d. on Friday, when the Southampton ship was worth from 2 3 to 2 6, and the Wisbech made 2 6 to 3 6. The first of the Scotch-grown fruit, which was received about a fortnight earlier than last year, realised 9d. to 10 1/2d. per lb. Cherries were abundant at 18/- to 20/- for English, and 12/- to 16/- per sieve for French, while Cherry Plums brought 12/- per crate. Gooseberries were steady, Scotch and English at 3d. to 4d. per lb., and Dutch at 12/- per half bag. Black Hamburg Grapes were cheaper at 2 6 to 3 6 per lb., Peaches realised 12/- to 18/- per doz., Melons, 3/- to 5/- each, and St. Michael Pines, 2 6 to 5/-, New Zealand Apples (Sturmer and Statesman) ranged from 21/- to 24/- and Australian (Cleopatra and Sturmer) from 20/- to 22/-. Winter Nels Pears were firm at 11 6 to 14/- per tray. Sunkist Oranges fluctuated between 28/- and 32/-; Spanish, 200 and 240, 26/- to 30/-, 300, 35/-, 420, 40/- to 50/-; Grape Fruit, 28/- to 34/-, and Lemons, 18/- to 22/-.

A good business was done in salads, and prices continued dear. Scotch Lettuces sold from 2 6 to 5/- per doz.; English and Dutch, 2 6 to 3 6; Cucumbers, Scotch, 4/- to 8/-; Dutch, 2/- to 4/-; Cauliflowers, 6/- to 7/-; Mint, 3/-; Mustard and Cress, 2/- to 2 6/-; and Dutch Carrots, 4 6 to 8/-; Vegetable Marrows, 7/- half pot; Turnips, 1 2/-; Tenerife Potatoes, 10/-; Maltese, 8/-; Italian, 4 6, and Jersey, 12/-; The Tomato consumption is not keeping pace with production, and prices displayed are easier, Scotch Tomatos being quoted at 1/- to 1 1/2/-, English at 10d. Dutch at 7 1/2d., and Guernsey at 9d. to 10d. per lb.

GARDENING APPOINTMENT.

Mr. J. T. Hayton, recently gardener to Col. Sir E. A. BROTHERTON, Bart., at Kirkham Abbey, Yorkshire, as gardener to W. J. O'NEILL, Esq., at Nunthorpe Hall, Middlesbrough.

CATALOGUES RECEIVED.

SUTTON AND SONS, Reading.—Seeds for summer and autumn sowing.

H. O. STROSE, 13, Cave Street, Portland Square, Bristol.—Wire flower prop.

JAXTON BROS., Bedford.—New fruits.

BARR AND SONS, 11, King Street, Covent Garden, W.C.2.—Flower seeds.

Foreign.

G. B. RODGERS, Beaver Valley Nurseries, Beaver, Pa.—Nursery stock.

H. CORREYON, Floraire, Chene-Bourg, Geneva, Switzerland.—Plants.

CALIFORNIA NURSERY CO., Niles, California, U.S.A.—Budwood, scions and cuttings, fruits, trees, plants, etc.

SCHEDULES RECEIVED.

ROYAL HORTICULTURAL AND ARBORICULTURAL SOCIETY OF IRELAND.—Exhibition to be held on Wednesday, Thursday and Friday, August 5, 6, and 7, at Ballsbridge, Dublin.—Secretary, Mr. E. Knowlton, 5, Molesworth Street, Dublin.

ROYAL WELSH AGRICULTURAL SOCIETY.—Exhibition to be held at Carmarthen on August 5, 6, and 7.—Secretary, Show Offices, Guildhall Square, Carmarthen.

BURNLEY AND DISTRICT HORTICULTURAL SOCIETY.—Exhibition to be held in the Large Assembly Room on Saturday, November 21.—Secretary, Mr. Arthur Eastwood, 59, Enismore Street, Burnley.

CARDIFF AND COUNTY HORTICULTURAL SOCIETY.—Thirty-first exhibition to be held in the Drill Hall, Cardiff, on Wednesday and Thursday, September 16 and 17.—Secretary, Lt. C. H. Longdon-Griffiths, 110, Bute Street, Cardiff.

GUILDFORD AND DISTRICT GARDENERS' ASSOCIATION.—Third exhibition to be held on Wednesday, July 15, in the grounds of Stoke Park Preparatory School.—Secretary, Mr. E. Sawyer, 30, Recreation Road, Guildford.



LONICERA TRAGOPHYLLA.

Photo C. P. Raffill

THE Gardeners' Chronicle

No. 2011.—SATURDAY, JULY 11, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 63°·3°.

ACTUAL TEMPERATURE—

The *Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 8, 10 a.m. Bar. 30·3, temp. 60°. Weather, Cloudy.

ALTHOUGH opinions may differ with respect to the aesthetic worth of variegated plants, there can be no difference of opinion as to their scientific interest. Variegation is, no doubt, to be regarded as a mild disorder of the green plant, and although the malady is not mortal, it generally leads to a weaker growth than that evinced by the green members of species which show variegation. This, however, is by no means to say that variegated plants are necessarily weakly—as witness the rampant growth made by the variegated race of the ornamental grass *Phalaris arundinacea*. To anyone who is aware of the essential importance of chlorophyll in the synthetic manufacture of organic food substances required by plants it might seem surprising that variegated plants which, of course, lack chlorophyll in their non-green parts, should show so much vigour as they do. But recent physiological researches have shown that most, if not all, fully-green plants contain more chlorophyll than they know what to do with. At all events, golden races, as for example, of Elder and Elm, which contain far less chlorophyll than do the normal green races, are much more efficient in manufacturing organic food materials than might have been conjectured from their relative poverty in chlorophyll.

If, then, the ordinary green plant makes more chlorophyll than under ordinary conditions it requires there is evidently room in the world—or at all events in the gardening world—for plants which, as their variegation shows, produce less chlorophyll. Needless to say in this world of many vicissitudes, the green plant with its large surplus of chlorophyll will be at an advantage. If compelled to grow in shady places it may still make enough food to maintain its body alive, whereas under these circumstances the variegated plant, unable to manufacture enough synthetic food, may starve. Although the conditions which bring about variegation are still unknown, gardeners, plant physiologists, and geneticists have discovered a good many interesting facts about it. As is well known, the chlorophyll of the green plant is distributed in minute doses in an almost infinite number of minute, living bodies—the plastids—which are contained in the cells of the green tracts of the less deep-lying tissues of leaf and stem. The plastids of the adult plant are all produced by the successive division of one or two colourless plastids which are contained in the egg cell from which the plant arises. As the fertilized egg cell divides, the plastids which it contains also divide, and when cell division is complete and two cells have arisen from the single-celled embryo, each contains a consignment of plastids, and so on. With each successive division of the cells of the embryo, the plastids undergo division so that some of them are contained in all the cells. When, after its sojourn in comparative darkness in the ovary of the mother plant, the seed is liberated, grows and reaches up to the light, the colourless plastids turn green. But the colour transformation, due to the appearance of chlorophyll in the plastids, occurs only in certain tracts of tissue. It is but rare, for example, that roots develop green colour; yet the aerial roots of Orchids are green—a fact which demonstrates that the laws which the plant makes for its own benefit it may also break as an act of enlightened self-interest. With this mode of development of the green plastids (chloroplasts) in mind, it is not difficult to understand how variegation may come about. Each member of the plant—root, stem or leaf—arises by the division and subsequent differentiation of a little group of cells at the growing point of the rudiment which forms that member. If for some reason or another one or more of these initial cells fail to develop chlorophyll, all its descendants may likewise fail. Hence variegation may be either sporadic or, if the cells of a symmetrical zone of the growing point fail to produce chlorophyll, the variegated region may be large and definite, so that the plant member produces a pattern as may often be seen in Pelargoniums, in which one half or one section of the leaf or stem may be green and the other white. In this manner are chimeras formed. There are grounds for regarding the suppression of chlorophyll (formation in the variegated parts of plants) as due to a specific substance, though why that substance—if indeed it exists—should affect one group of cells and not another remains a puzzle. In any case, variegation may be handed on from one generation to another. In some cases it is carried only by the female parent, in others by either parent. In the former, variegated offsprings are produced only if a variegated plant is used as the male parent and a normal green plant as the female parent. If the cross be

made the other way variegation does not arise. In plants which show this mode of inheritance variegation must be ascribed to a malady inherent in the plastids themselves, and inasmuch as the plastids appear to be carried only by the female reproductive cells the matroclinous form of inheritance becomes intelligible. But there are other plants in which variegation arises in the descendants of a cross between normal green and variegated races no matter how the cross be made. The male reproductive cell no less than the female may carry the factor which brings about variegation. It must, therefore, be assumed that in such cases some definite substance inimical to chlorophyll formation, or possibly to plastid growth and division, is present in the living substance of the variegated plant, and is handed on by reproductive cells from one generation to another. A very striking example of the progeny of variegation was recently brought to our notice. A group of the Water Flag *Iris Pseudacoris* growing in a pocket in an ornamental pond had seeded freely and many of its seeds had germinated between the stones with which the side of the pond is paved. Of the seedlings some had grown vigorously and had reached an average height of six-inches. They were of a full green colour. Others were puny, not more than an inch or so in height. They were albinos, lacking chlorophyll completely, and some (almost as small) were faintly variegated. It may be supposed that just as one sector of a leaf of this *Iris* may be green and the other colourless, so the male germ cells of the pollen and the female germ cells of the ovules may carry or not carry the "variegation-producing virus." When carved out from a green sector the germ cells are normal and give rise to wholly green plants, but when carved out from a sector of tissue in which the "virus" is present, the resulting plant is an albino, which can live only so long as there are stores of food to be obtained from the endosperm of the seed. Whether this be the interpretation or not, only breeding experiments which are being made by the owner of the garden can decide. The variegation of the Flag *Iris* is one of the most beautiful and consistently variable phenomena in nature. In the spring the young growth is whitish-yellow, and only in sections of the older parts of the leaves is a full green colour to be seen. But as the year wears on the variegation becomes less marked, until in winter it is lost, or all but lost, and the variegation of summer is replaced by a well-nigh uniform greenness which endures throughout the winter months.

National Sweet Pea Society's Outing.—The Committee of the National Sweet Pea Society is arranging for a visit to the Society's trials of Sweet Peas at Syon House, Brentford. The programme is: Meet at the R.H.S. Hall, Vincent Square, S.W.1., at 9.45 a.m., on Friday, the 17th inst., and go by motor coach, leaving at 10 o'clock, to Syon House Gardens, Brentford, to view the trials. Luncheon at Carlton House, Kew, at one o'clock, then drive to Hampton Court and return to the R.H.S. Hall by 5 p.m. The trials should be especially interesting this year, as, in addition to one-hundred-and-twenty-six novelties, nearly all the classification varieties and sixteen varieties raised previously to the Society's formation are being grown. Tickets, including the luncheon (exclusive of wines) are 8s. each, and early application should be made for them to the Secretary, Mr. A. C. Bartlett, 318, Kew Road, Kew, Surrey.

South African Farmers' Visit to Messrs. Sutton and Sons.—The South African farmers visiting this country to study our methods of farming, etc., inspected Messrs. Sutton and Sons' nursery at Reading on the 30th ult., where they were received by Mr. Leonard Sutton and Mr. Martin F. Sutton. A systematic tour of inspection was made, and the visitors shown the various appliances for cleaning and grading the various kinds of farm and garden seeds. The trial grounds of farm and garden crops were examined with interest and appreciation. The methods of raising new varieties by cross fertilisation and other means were explained, and the results with Peas, Mangolds, and other plants shown at different stages of development. The extensive glasshouses were also visited. The party was entertained to luncheon by Messrs. Sutton and Sons, and afterwards the visitors proceeded to inspect the Dairying Institute at Reading, and later visited the Reading Agricultural College.

Forthcoming French Chrysanthemum Congress.—The Annual Congress of the French Chrysanthemum Society is to be held this year at Lyons, from the 5th to the 8th of November. It will be associated with an International Exhibition to be organised by the combined local horticultural societies assisted by the P.L.M. Railway Company, and this is expected to attract large numbers of visitors.

Cardiff Autumn Show.—The thirty-first annual exhibition of the Cardiff and County Horticultural Society will be held in the Drill Hall, Dumfries Place, Cardiff, on Wednesday and Thursday, September 16 and 17. An excellent schedule of one hundred and fifteen classes has been arranged, and there are sections for plants, cut flowers, decorative exhibits, fruits, and vegetables, and, in addition, special classes for novices and for cottagers resident in the counties of Glamorganshire and Monmouthshire. There will also be an exhibition of honey and appliances made by the Glamorgan Beekeepers' Association. The secretary is Lt. C. H. Longdon-Griffiths, 110, Bute Street, Cardiff.

Shrewsbury Floral Fête.—The Shropshire Horticultural Society's great show to be held in The Quarry, Shrewsbury, on August 19th and 20th, promises to be as great a success as its predecessors. Prospective exhibitors should remember that the closing date for entries is Wednesday, August 12th.

Guildford Gardeners' Monthly Journal.—For six months the Guildford and District Gardeners' Association has published a *Monthly Journal* for the benefit of its members. This consists of eight small octavo pages, in a stiff, grey, paper cover. The contents include chatty notes by Mr. W. F. Stedman, who is eminently successful as the Editor, although he does not claim to be either a gardener or a journalist, but "merely an amateur in every way." He is doing useful work for his Society and we cannot remember any other similar society which has such a publication. The issues arrive early in each month, consequently "Garden work for the month" provides useful memoranda for the amateur members. Notes of lectures given to the members, and accounts of excursions, add to the interest of this little publication, while the brief articles on some particular garden subject have a distinct horticultural value. The July issue is Part 6 of Vol. 1 and we gather from it that the Society's show, to be held in Stoke Park on July 15th, promises to be a great success and that the "outings" to good gardens in the district—Marrow Grange, Pyrford Court, Tangle Park and West Hall, among others—are an increasingly popular and educational feature of the operations of the Association. In passing we may observe that many Gardeners' Associations heap all the secretarial work on to one willing person and sooner or later

his duties become burdensome; at Guildford there are Lecture, Show and Rose Secretaries, in addition to the General Secretary and an Editor, thus the interest is widely spread and no one is unduly burdened with work.

Mr. C. T. Musgrave.—As chairman of one section (B) of the Royal Horticultural Society's Floral Committee, Mr. C. T. Musgrave occupies an important position in the world of horticulture. This position is not due, however, merely to the fact that he is a member of the Council of the Royal Horticultural Society (and has been so since 1921), but because he has a very intimate knowledge of hardy plants derived from close association with them for nearly forty years. For this period gardening has been his hobby and, during recent years, relaxation from business cares has allowed him more time to tend the plants he loves so well at Hascombe Place, Godalming. Here he has brought together a very interesting collection of shrubs and alpine plants to which he gives his personal care. He is very proud



MR. C. T. MUSGRAVE.

of his success with the rare *Pentstemon puniceus* and he has raised a very interesting race of *Sphaeralceas* by crossing varietal forms of *S. Fendleri*. Mr. Musgrave first came prominently before the horticultural public in 1922 when he was elected Treasurer of the R.H.S., a position he held for two years. He is Chairman of the Committee dealing with the arrangements for the new hall and also Vice-chairman of the Wisley committee. Like many other good gardeners, Mr. Musgrave has what may be termed a hobby within his hobby and he has devoted a great deal of time and attention to the propagation of shrubs and other plants by means of cuttings; indeed his long experience has developed a skill that many others envy, for he has succeeded where they have failed.

Sweet Pea Exhibition in Brussels.—The Exhibition of Sweet Peas held in Brussels during June was a great success, notwithstanding the unfavourable weather, which greatly reduced the number of exhibits. The opening ceremony was performed by the Minister of Agriculture, with a number of distinguished supporters. There was a great number of classes, and some valuable special prizes, including a challenge cup, won by the State Horticultural College at Vilvorde; the Lambeau Cup, awarded to M. Fl. Braem, of Adinkerke, and the Seghers cup, won by the same grower, who also obtained several other prizes and awards.

Plants of Special Interest at Kew.—The small division of the Cattleya House at Kew, a section of what is known as the T. range, which has been allotted to the special purpose of displaying exhibits of plants of botanical and educational interest, contains at the present time three genera of great gardening importance, namely, *Calceolaria*, *Pelargonium*, and *Petunia*. The exhibits of these two former plants were referred to in the issue for June 6, p. 386; the *Pelargonium* is probably of even greater importance in gardens than either *Calceolaria* or *Petunia*, and all who cultivate this useful flower will be interested to see the parents from which the bedding *Pelargoniums* have been raised. The two most directly concerned are *P. inquinans* and *P. zonale*, and both are very attractive in themselves, the chief difference which strikes the observer being the much narrower petals of the parents. The following particulars of the genus *Pelargonium* are displayed in connection with the exhibit:—"The genus *Pelargonium* consists of some 170 species, which are mainly confined to South Africa. The flowers differ from those of *Geranium* in being irregular, two of the petals being directed upwards and distinctly coloured or marked, while three are downwards directed. There is also a nectary adnate to the flower stalk and nearly of the same length. It can be generally detected as a brownish line along the flower stalk, ending in a slight swelling near the base. In *Tropaeolum*, which is closely allied to *Pelargonium*, the nectary is free. In some species of *Pelargonium*, notably *P. rutae-folium*, the three lower petals are folded together to form a keel enclosing the stamens and styles, while the two upper petals are pointed upwards or backwards, and may be compared to the 'standard' of the flower of the Pea. *Pelargonium dasycaulon* shows flowers midway in type between the ordinary *Pelargonium* flowers and those with the Pea-flower structure. The *Pelargoniums* are commonly known as 'Geraniums' in gardens, and our garden forms have been derived from *P. inquinans* and *P. zonale*, but the irregular outline of the flower has been lost, so that now the flowers, though still irregular in structure, appear regular to the eye, the markings of the two upper petals and the tubular nectary being present in all the cultivated forms. In the true *Geraniums*, many of which are native to Great Britain, the flower is perfectly regular and there is no nectary. Many of the Cape *Pelargoniums* have tubular stems or swollen rootstocks and pinnate leaves."

Presentation to Dr. Claridge Druce.—The members of the Botanical Society and Exchange Club of the British Isles made a presentation to Dr. Claridge Druce on the 27th ult. in recognition of his valued services to British Botany. The presentation took the form of a book plate and 4,000 copies, an address and rare botanical works. The proceedings were held in Sir Geo. Holford's town residence, Dorchester House, Park Lane, and the large and distinguished company present testified to the esteem in which Dr. Druce is held by his fellow workers in the interesting study of our native flora. The book plate was designed by Mr. Emery Walker and it exhibits the arms of the Linnean, Pharmaceutical, and Ashmolean Societies; of the Grand Lodge of England and those of the Botanical Society. The last is a figure of the Victoria regia, which was first exhibited in this country at the meeting of the Botanical Society of London on September 7, 1837. The book plate also exhibits the arms of Magdalen College and the Universities of Oxford and St. Andrews; of the City of Oxford, of which town Dr. Druce has been Mayor, and of the Borough of Northampton where he was apprenticed. The presentation was made by the Viscount Grey of Fallodon who said it was a personal pleasure to be allowed to hand over the gifts to one whom he had

known so long and whom he held in great affection. Sir George and Lady Holford entertained a party at luncheon, which included the Duke of Argyll, the Earl and Countess of Bathurst, Viscount Grey of Fallodon, K.G., the Hon. Mrs. Adcane, Sir Thomas and Lady Butler and Dr. Druce.

Serious Plantation Fire.—A serious and extensive fire, involving the destruction of thousands of young trees, and the valuable sawmill at Redmoss, Enrie, Banffshire, occurred last week. The fire started during the night at the sawmill, owned by Messrs. James Jones and Sons Ltd., and burned eastwards against the wind, which, however, carried the showers of sparks over the turnpike road and set fire to the recently replanted woodland area on that side. Little water was available, and what there was had to be carried in buckets—a futile process in such an emergency. Cartloads of sand were dumped down over the fire area, thereby checking the flames somewhat. It is difficult as yet to give an approximate estimate of the damage done, but between the loss of the mill, the large stacks of manufactured timber and the woodland area destroyed, the sum must run into thousands of pounds.

An Educational Economic Garden.—The Educational Garden and Museum at "Westfield," Reading, will be open to Visitors free of charge on Wednesday, Saturday and Sunday, July 15th, 18th and 19th, between the hours of 3 and 6 p.m., at the invitation of Dr. J. B. Hurry. The special feature of this garden is the cultivation and systematic grouping in demonstration pots of plants that are of economic use to man. Special attention is devoted to plants that are used in the preparation of foods, fibres, dyes and medicines. In the adjacent museum are exhibited numerous economic products derived from the plants grown in the garden. Refreshments provided for visitors from a distance.

Competition for Design of Topchider Park, Belgrade.—The result of this competition (which was referred to in our issue of the 13th December, 1924) is now announced. The first prize has been awarded to Albert Esch, Karl Kotraschek and Paul Rueckauf, of Vienna; the second to Wilhelm Dexor, Egli and Nastic, also of Vienna. The third and fifth prizes remained in Belgrade, being awarded to native designs, the fourth going to a Graz firm of landscape gardeners, Thahammer and Pohlenz. We learn that twenty-eight designs were sent in from various European countries, but none appear to have emanated from England.

Destruction of Kelvin Hall.—A disastrous fire, which broke out in Glasgow on Tuesday, the 7th inst. completely destroyed the Kelvin Hall in which Glasgow flower shows have been held in recent years. The fire was of a most extensive nature and fire engines were summoned by wireless telegraphy. The hall which had the largest floor space of any building in the United Kingdom, was the property of the Glasgow Corporation and cost £50,000 to erect. It was built mainly of wood, with brick walls, but only the four walls remain. The Glasgow and West of Scotland Horticultural Society's show was arranged to be held in Kelvin Hall on September 1, and although the time is short, it is to be hoped that the Committee will be able to provide suitable alternative accommodation.

Watering the Kew Rock Garden.—The permanent system of watering the rock garden at Kew, which has recently been installed, seems to perform its function admirably. The large mains, which are placed along the back at both sides, ensure sufficient pressure to produce a fine, but copious spray from the jets, and as these are placed at convenient intervals, there falls a gentle misty shower which penetrates the soil without beating it down or washing it to the lower levels. It was a happy idea to adapt the nozzles such as are used on

knapsack and other sprayers for this purpose. The large iron pipes are somewhat unsightly, but now that the success of the method seems assured, no doubt the pipes will be hidden or masked so far as possible.

Appointments for the Ensuing Week.—Monday, July 13: United Horticultural Benefit and Provident Society's meeting. Tuesday, July 14: Royal Horticultural Society's Committees meet; National Carnation Society's Show at R.H.S. Hall; Wolverhampton Floral Fête (3 days); Roundhay (Leeds) Horticultural Society's show (2 days);

be the fortunate candidate. We cannot say that we anticipate many English competitors, for it must be owned that English gardeners are upon the whole not more conspicuous for their skill in cultivation than for their unacquaintance with botany—that is to say with the names and distinctions of plants. Those of them who are ambitious of securing one of the best prizes in the field of English gardening will now see the importance of attending to the advice we have so often given, that they should neglect no opportunity of making themselves acquainted with that

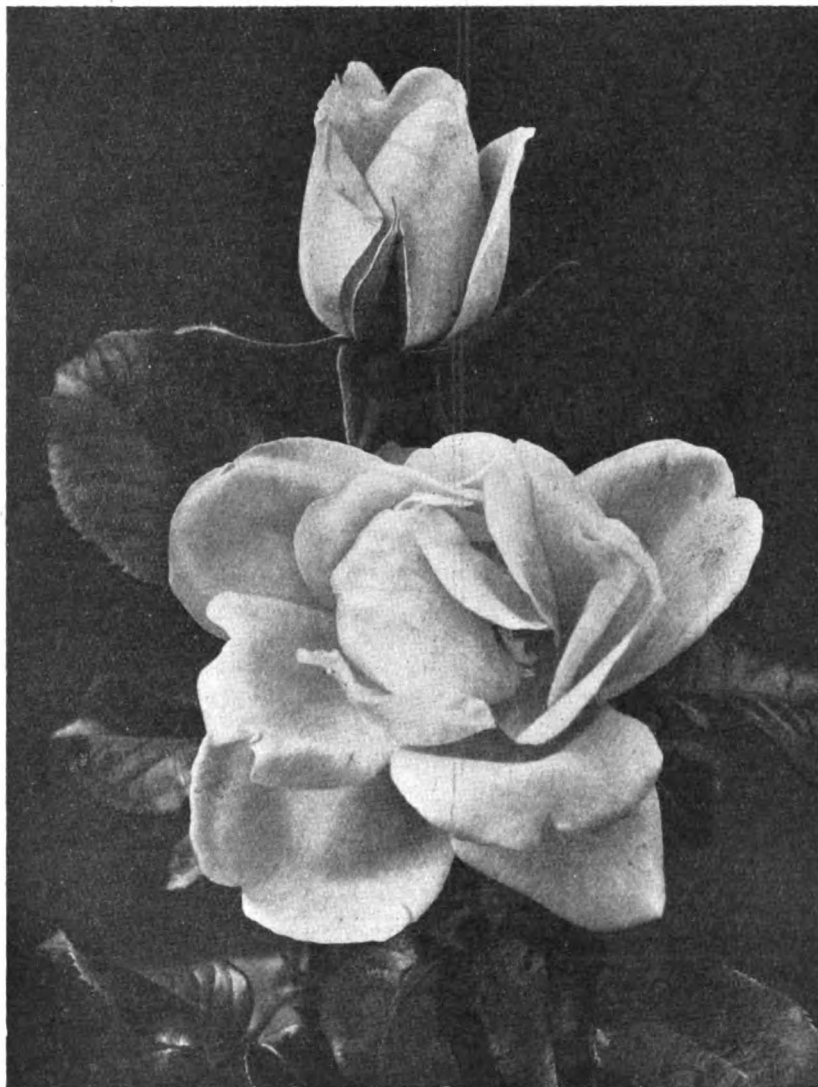


FIG. 10.—ROSE GWYNETH JONES.

N.R.S. Gold Medal, July 3 (see p. 35).

Jersey Gardeners' Society's meeting. Wednesday, July 15: Guildford and District Gardeners' Association's show. Thursday, July 15: National Sweet Pea Society's show (2 days); National Carnation and Picotee Society's show at the Worshipful Company of Carpenters' Hall. Saturday, July 18: Elstree and District Horticultural Society's show; Newburgh and District Society's show.

"Gardeners' Chronicle" Seventy-five Years' Ago.—*Vacant Curatorship at Cambridge Botanic Gardens.*—The death of Mr. Andrew Murray, announced in another column, causes a vacancy in the Curatorship of the Botanic Garden at Cambridge. It is to be presumed that the Trustees, in filling it up, will again have recourse to the system of public examination; and we shall be curious to know who will

humble kind of botany which consists in knowing the names of the plants they grow. To be ignorant of the names of common plants; not to know common plants when they see them, is, one would think, a deficiency which would by common consent be set down as disgraceful to those on whom it can be proved. Nevertheless the deficiency exists, and will continue to exist until the possession of some reasonable botanical knowledge is made a condition by those who employ gardeners. If it were settled that a man acquainted with the names of plants should be worth £5 a year more than he who knows nothing about the matter, we should soon have our young gardeners at work in earnest to qualify themselves for the higher wages—and that time is quickly coming on. *Gard. Chron.*, July 13, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Epidendrum.—Many of the *Epidendrums* are of little garden value, but a few are well worthy of cultivation. One of the most useful and decorative is *E. prismatocarpum*. Plants of this species have recently finished flowering, and the necessary re-potting should be attended to now. Specimens that have become pot-bound and grown over the sides of the receptacles, causing them to be somewhat bare in the centre, should be taken out of their receptacles, and the back pseudo-bulbs cut away, leaving only two or three behind each leading growth. Several of the portions may be placed together in moderate-sized pots or pans. Make the soil firm around the rhizomes and arrange the latter so that two or three of the leading shoots point to the centre, thus making a well-balanced specimen. Healthy plants, well-furnished with leaves and sound roots, may be transferred to larger receptacles. Others that do not require re-potting will be benefited by having some of the old rooting material removed from the surface and given a top-dressing. Keep the newly-potted plants rather dry for a few weeks, but whenever moisture is applied give a thorough soaking, taking care that the water does not lodge in the centres of the young growths. These Orchids are best grown in a light position in an intermediate house.

Epidendrum vitellinum.—*E. vitellinum majus* is also a very useful member of this genus. The winter-blooming variety is a bright, cool-house Orchid, and should be re-potted or re-surfaced when new growth commences. Employ shallow pans or other receptacles provided with ample drainage, and either suspend the plants from the roof-rafters or stand them as near to the roof-glass as possible in an airy position in the cool *Odontoglossum* house. When they are well-established and root action is vigorous, give them liberal supplies of water until the new pseudo-bulbs are completed; during their season of rest afford only sufficient moisture to keep the pseudo-bulbs firm.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Sweet Peas.—Plants from the chief sowing are now producing flowers freely and will need constant attention. Intense heat is always trying to these plants, and, on light soils particularly, great care should be taken that they do not suffer from lack of moisture at the roots. Copious waterings at fairly long intervals are much better than frequent dribbles; an occasional application of diluted liquid manure will help to maintain the vigour of the plant, but it is always safer to apply this stimulant soon after a heavy watering has been given. Syringing the plants after the heat of the day has passed is also helpful to healthy growth. The removal of fading flowers should be followed up persistently to prevent the formation of seed pods or the plants will soon be drained of vitality.

The Rose Garden.—Dwarf Roses generally have been flowering abundantly and are giving great satisfaction. Remove the flowers as the petals begin to fade so that the plants may not be distressed by producing seed vessels. So soon as the first flush of flowers begins to wane give the beds and

borders a sprinkling of guano or fine bone meal, hoeing the fertiliser lightly into the surface and following with a good watering unless rain is expected. The earlier flowering *Wichuraiana* varieties pegged down have also flowered profusely. So soon as the flowers are over, the shoots which have produced them should be cut out and the new growths regulated in their places, thus ensuring a better ripening of the young wood and enabling it to withstand inclement weather during the winter. On pillars and trellises also, it is much better for the plant themselves and for subjects growing in the borders in close proximity to them that the old growths should be removed immediately after flowering, so that the new growths may benefit from an increased amount of light and air. A good deal of the mildew frequently seen on rambler Roses in the autumn is due to a congested state of the plants, shoots no longer needed being allowed to remain in crowded bundles to the detriment of everything around them. Later-flowering varieties should not be attended to in pruning until a later period, but the same remarks apply to them. Give dwarf *Polyantha* varieties an occasional stimulant to encourage the development of new growths and to favour continuous flowering. Hedges of Sweet Briar and its hybrids, as well as those of other species, need to have straggling growths tied in; bare places may be made good by carefully training strong growths to occupy such positions, but care should be taken to avoid anything approaching formality. Should mildew appear dust the foliage when it is damp with flowers of sulphur or spray the plants with sulphide of potassium at the rate of half-ounce to one gallon of water.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

The Stove.—The continued bright weather of the past month will have called for careful attention to cultural requirements on the part of the grower of stove plants. Given proper attention in watering and feeding, *Crotons* will have benefited considerably by way of attaining rich colours in their foliage. Specimen plants should not be allowed to suffer from dryness at their roots or they will rapidly lose their leaves. The syringe should be used freely and often, to keep down thrips and red spider. It is a good plan to syringe the plants overhead during late evenings following very warm days. *Caladiums* delight in much heat and moisture but require more shade than *Crotons*, in fact, their tender, ornamental leaves quickly suffer injury when exposed to the direct rays of strong sunshine. Unless these plants are fed liberally when their pots have become well filled with roots, their foliage soon becomes dull in colour and the plants lose their true character. Vigour of growth and brightness of foliage may be maintained, however, for months if the plants are potted on when they need it, and even without transferring them to large pots, if the plants are regularly and liberally fed. If a few of the oldest leaves are cut away from time to time the usefulness and beauty of these plants will be considerably enhanced.

Acalypha.—Cuttings of *Acalypha musaica* and *A. Macaefecana* inserted singly in small pots now, and placed in a propagating frame, should make useful plants by the autumn. When grown on a single stem, in pots of small dimensions, with their foliage intact to the rims of their pots, these plants are very useful for room decoration in autumn.

Richardia africana.—The rested plants will have received a good baking during the past few weeks, which will have been beneficial, and they may now be repotted.

Three parts of strong, turfy loam to one part of decomposed manure with charcoal and coarse sand added, form a suitable compost. The largest and strongest crowns may be placed singly in pots of eight or nine inches diameter. The smaller crowns may either be placed singly in seven-inch pots or three of them together in a nine-inch or ten-inch receptacle.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Apricots.—Keep the ventilators wide open in houses containing Apricots that are ripening and at their final swelling. Where the trees are carrying heavy crops, give the roots an occasional watering with weak liquid manure. The borders will require copious supplies of water from now until the autumn, as the slightest sign of dryness at the roots will result in almost certain failure with next season's crop. Keep the leaders well trained in and the spurs pinched back to assist the fruit buds. Great care is necessary in picking the fruit not to damage the skin in any way.

Figs.—Permanent Fig trees are swelling their second crops. Keep the leaders tied in and the growths stopped at the fifth leaf, removing all thin, useless shoots. Endeavour to keep the trellis covered with clean, healthy fruiting wood, and the foliage fully developed. Figs require copious supplies of water and feeding at all times; liquid manure should be used at every third watering, and artificial fertilisers as advised by the makers. See that the fruits are perfectly ripe before picking them. This requires very careful watching as far too many Figs are gathered too soon; the fruit should almost fall from the stem with the slightest touch. It is a good plan to spread a light mulch over the borders at this season.

Pot Cherries.—When the crop of pot Cherries is finished the trees should be taken outside to ripen their buds for next season. Pot-bound trees should be given frequent supplies of weak liquid manure. Attend to watering closely and syringe the foliage twice daily; in late houses where the fruits are colouring and finishing syringing should cease and watering done with great care. Apply a slight mulch of long straw manure over the roots, and see that the nets are secure over the ventilators, to keep out birds. A slight shade on the glass will benefit the fruits and prolong the season. The variety *Florence* should be grown for the latest crop.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Peaches and Nectarines.—Continue the work of training in all growths of these trees that are required for furnishing the wall. Other growths should be cut away. If the crop is heavy continue to thin the fruits but do not overdo it before the stoning period is over, as many may drop during that process. Syringe the trees on all favourable occasions and water the border regularly with liquid manure; if this stimulant is not available give the border a dressing of artificial manure, say two ounces to the square yard. The old mulching material may be removed if it is exhausted of its fertility and fresh horse manure substituted.

Fig Trees.—These trees are growing rapidly and the new shoots will require to be shortened to the fourth or fifth leaf according to the length of growth. Remove all growths that are not required for training in; do not overcrowd the tree with young growths. Where the fruits have set

thickly thin them to two or three to a branch, and if they are required for exhibiting, half that quantity will suffice. Syringe the trees daily if weather permits, give copious supplies of liquid manure at the roots and mulch the borders heavily with decayed manure. Where Figs are not cropping and growing vigorously do not use manures but syringe them daily to keep them clean and healthy. If moisture is required at the roots use clear water and only sufficient to keep them in a healthy condition.

Newly Planted Fruit Trees.—All newly planted trees on walls and in the open should be watched to see that they do not become dry at the roots. In view of the recent hot weather this is very necessary. The surface soil should be stirred occasionally with the hoe to keep it open and a mulch of short manure applied whilst the ground is still moist. This will keep the roots in a moist condition. Syringing the trees in the evenings of hot days will help them to develop healthy young growth and keep them clean. Where time can be spared all wall trees will be all the better for a heavy syringing, because the dry weather has favoured attacks of red spider on the leaves. A garden engine or motor pump is best for this purpose as it is much more powerful than an ordinary hand syringe.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Shallots and Garlic.—In most districts these crops have completed their growth and the bulbs should be lifted on the first favourable opportunity. If the weather is fine and sunny the bulbs will soon ripen if laid thinly along a garden path; if wet or showery it is safer to place the bulbs in a dry shed or otherwise in a dry, airy greenhouse on stages, so as to have the bulbs matured thoroughly before they are stored in their permanent quarters throughout the winter. If the bulbs have been properly harvested there will be no difficulty in keeping them sound right through the winter, provided they are stored in a proper manner.

Leeks.—As more ground becomes vacant a good area should be planted with Leeks. This is a most useful crop to plant now, as good Leeks may be dug from this planting in the early spring when there is a scarcity of vegetables. The method of planting in holes made with a dibber as suggested some time ago is the most convenient and best method now. The seed bed containing the Leeks should have a thorough soaking before the plants are lifted for setting out. Plants of the earlier batches growing in trenches will require a little soil drawn around the stems and they should be watered if the weather continues dry.

Vegetable Marrows.—Vegetable Marrows growing in any ordinary position in the garden will require liberal soakings of water during dry weather. If grown on a heap of decaying material the need for watering will become greatly minimised owing to the amount of moisture retained in the decaying heap. The Marrows should be cut immediately they attain the size required for use by each particular establishment.

Lettuces.—There is no crop which requires more thought and attention than Lettuces, in times of drought than Lettuces, both Cos and Cabbage. To keep up a continuous supply of nice young heads with crisp hearts the grower must be prepared to sow seeds little and often, thoroughly watering the drills before sowing. When

germination has taken place the great need of the plants is moisture, and watering must never be neglected.

Endive.—Make a further sowing of varieties of Endive to carry on supplies through the winter. A good batch of the seedlings from this sowing should be planted in cold frames in the kitchen garden, where they may be brought along as required and also receive the necessary protection through the winter. Plants from the earlier sowings should now be set out in their permanent quarters.

Winter Greens.—The planting of all winter greens should now be nearing completion. This has been a difficult operation this season owing to the prolonged drought, which at the time of writing has extended over five weeks. It is advisable to soak the ground thoroughly the evening before planting and

growths later. Maurandyas readily climb any trellis work unaided; ordinary fillis twine stretched vertically on the wall forms the best medium for them to cling to. On a south wall in an ordinary summer the growths will often attain to a length of sixteen-feet, and these, when covered with the violet-purple flowers, are very showy indeed. The two best garden species are *M. Barclayana* and *M. scandens*.

Sweet Peas.—The rows and clumps of these flowers should be examined on frequent occasions with a view to removing any blooms that are faded, before pods form. Should dry conditions continue a good watering will benefit the plants, and a mulch may be applied. This treatment will assist in retaining the moisture in the soil. If growth appears to be at a standstill, some quick-acting fertilizer may be



FIG. 11.—*DAVIDIA VILMORINIANA* AT LA FOSSE.

(see page 28).

also to soak the plants in the seed-bed that are intended for planting out. The seedlings will become established sooner if the ground is watered during the evening of the day of planting.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Maurandya.—The Mexican Maurandyas are rapidly-growing, flowering climbers, suitable for furnishing terrace walls. In northern gardens they are best treated as biennials; seeds may be sown now, and the young plants grown on in a cool greenhouse until they are ready for planting out next year in the first week in June, if suitably hardened. Stopping the shoots on one or two occasions during April and May will result in a good formation of flowering

applied, thoroughly watering it in the soil immediately it is used.

Cabbage.—A sowing of Cabbage seeds may now be made to raise seedlings for planting in the autumn. When planting out the seedlings it will be wise to prick off a second batch into frames.

Parsley.—A sowing of Parsley seeds made now will ensure a good supply for garnishing, etc., in winter. The seeds should be sown on ground that is fairly rich, and sheltered from north and east winds. When the seedlings are large enough to transplant sufficient may be thinned out carefully and transplanted in a cold frame which has been prepared to receive them. Some of the seedlings may also, if room and time permit, be planted in boxes and placed under glass. The boxed plants will prove most useful and easy of access should heavy snows occur during winter.

HARDY FLOWER BORDER.

ARMERIA RUBY.

I WOULD like to endorse all the praise which Mr. W. Logan gives to *Armeria Ruby* (p. 454, *Gard. Chron.*, June 27, 1925). I have been enormously impressed with its beauty this summer, with its large heads of clear warm, brilliant rose flowers on long, wiry stems. But "honour to whom honour is due"; this plant was, I believe, first sent out by Messrs. Bees, Ltd., of Liverpool, and called *Armeria Bee's Ruby*. It seems only fair to the original publishers of the plant to give it its full name. Bee's Ruby is a form of *Armeria Cephalotes*—or *latifolia*.

Besides being an uncommonly fine border plant and very valuable as a cut flower, it may take its place in the rock garden, where it scores by its brilliance and grace. It is, moreover, a fine plant for the alpine house. Mr. Fulford, gardener to Lady Hudson, showed me some well-grown pot specimens in the alpine house at Buckthorn Hill early this spring, and told me that it had been in flower practically the whole year, right through the winter, without a scrap of artificial heat in the house. Under glass the colour is, if anything, more beautiful than in the open—a softer, more delicate pink.

Among the true Sea Pinks, *Armeria maritima*, there are two or three distinct colour forms. The original wild plant as one finds it on the sea coast, varies through shades of pink of a rather chalky tone, but most pleasing in the mass. Then there is the old white variety *alba*, an excellent, good plant, and also the form *Lauchiana*. This last must be a pretty old variety, and for long it was the deepest coloured form in cultivation. It is certainly a very pleasing deep strong pink, almost crimson. The deepest coloured of all the forms of *Armeria maritima*, however, is one which I found growing in a cottage garden in Wiltshire some eight or ten years ago. This really is a crimson, several shades deeper than *Lauchiana*, with larger flower heads. The plant gives several spasmodic, minor crops of blossom after the main flowering of May and June is over. It has been christened and published under the name *Armeria maritima* var. *Vindictive*.

All these varieties of Thrift are valuable in the rock garden, and they make, moreover wonderfully neat, attractive, turf-like, evergreen edgings to flower borders. They are among the easiest of all hardy plants to grow, rapidly forming healthy tufts or mats in any reasonably good soil in full sun. Sun they must and will have. In shade they become lax in growth, and shy and pallid in flower. They are propagated by division. *Clarence Elliott, Stevenage.*

RANUNCULUS BULBOSUS FL. PL.

I HAVE been much interested in the notes on this and other double Ranunculi in *The Gardeners' Chronicle*, but they do not throw much light on the name of the one referred to by Mr. Clarence Elliott, on p. 454 (June 27), which Mr. Elliott states he received from the Continent as *R. speciosus flore pleno*.

I grew the same plant for many years, and agree with him in thinking it quite distinct from *R. bulbosus* fl. pl. The description given of it by Mr. Elliott agrees with my plant.

On finding from the *Index Kewensis* and other works of reference that *R. speciosus* was considered a synonym of *R. bulbosus*, I spent a considerable time in endeavouring to discover what this plant really was, but I have never been able to identify it to my satisfaction. It is a finer plant than *R. bulbosus flore pleno*, but is not nearly so plentiful as at one time, and it was quite a scarce plant when I first secured it upwards of forty years ago. I am glad to know that Mr. Elliott has it at Six Hills. It is a hardy *Ranunculus* of much beauty, whatever its name.

Mr. Elliott also mentions *inter alia* the double variety of the lesser Celandine, now an uncommon plant, though not in the same plane of beauty as this pseudo *R. speciosus* fl. pl. It is very scarce now, apparently, but I do not think it has much to commend it besides its doubleness. *S. Arnott.*

ACANTHUS.

Of all the herbaceous plants with ornamental foliage with which the South European flora has enriched our gardens for a long time, the members of the genus *Acanthus* are undoubtedly amongst the most decorative.

They prefer a rich, deep loam and an open, sunny position, but they will thrive in any reasonably good soil and in partial shade. Their bold habit and vigorous growth make them suitable for grouping in large borders, for growing as isolated tufts in front of shrubberies and for some of the more open positions in the wild garden.

A. mollis latifolius is a very handsome plant. Established plants flower freely, throwing their strong spikes well above the foliage. The flowers, which are sessile and situated each in the axil of a bract, are not showy, but nevertheless effective.

A. longifolius is an allied species with narrower and longer leaves. It is a magnificent, vigorous plant with abundant luxuriant foliage and is of free-flowering habit.

A. spinosissimus is a more slender growing plant but develops a handsome spike bearing rosy flowers and acute, recurved spines.

Most of the *Acanthuses* have spreading root stocks and may be propagated easily by division. They also seed tolerably freely, which provides an additional means of propagation. *W. Auton.*

ALPINE GARDEN.

COTYLEDON SIMPLICIFOLIA.

This very delightful plant has the great merit of being quite happy under any ordinarily good conditions; it prefers, perhaps, a well-drained, loamy soil in a sunny position in the rock garden, where it will soon form goodly masses of fresh green and somewhat succulent, simple leaves, surmounted during the early summer by the exceedingly graceful pendant spikes of small, pale yellow flowers.

It is one of the best of rock-plants, and very easily propagated from cuttings. Here, in Gloucestershire, it survives the severest winters; it is delightful in a large pan, and I have often been impressed by its loveliness when shown in generous masses at the Chelsea shows.

COTYLEDON CHRYSANTHA.

This plant, which is often grown under the name of *Umbilicus chrysanthus*, requires protection from damp, otherwise it is a desirable subject for a sunny spot in the rock garden.

The greyish-green, dense rosettes of leaves produce stems varying in height from three inches to nine inches and surmounted by cream-coloured flowers, wherefore the specific name is inappropriate, but this latter was, I believe, given to the plant before its description had seen it in a living state.

It is an ideal plant for the alpine house or for a dry position in the rock garden, if protected from excessive damp in winter. This *Cotyledon* may be propagated by division. *Ralph E. Arnold, Cirencester.*

ONONIS ROTUNDIFOLIA.

NOT many of the *Ononises*, or Rest Harrows, are commonly cultivated. Some would suggest introducing the common one, which grows on many of our sea shores,

into our gardens, but should this advice be taken it ought to be with severe limitations. It is of no use in rich soil, growing fat and lush in its foliage and shy of flowering. If tried, it should be grown in poor, sandy or gravelly soil on a sunny bank. But it must be watched or it will spread and occupy a good deal of space to the detriment of choicer plants.

One cannot allege this fault against its congener, *Ononis rotundifolia*, the round-leaved Rest Harrow. It is a charming little plant of rather shrubby habit and forms an erect bush, varying in height from about six inches to twelve inches. The general contour of its leaves gives one the impression that they are rounded, but they are prettily divided and lobed. The Pea-shaped flowers of a tone of rose are darker on the keel.

It is a commendable subject for the rock garden, but, like most plants, it has a failing, for in some winters its powers of endurance are overtaxed and it succumbs. This is because it is not absolutely hardy, but in dry soil and in a semi-sheltered place it has every chance of surviving for a number of years. If, unhappily, it should die through severe weather it may be easily replaced by raising seedlings, and it may even happen that it may have sown itself and a few seedlings may be found in the immediate vicinity of the old plant. These withstand the winter much better than the older plants. It is so easily raised from seeds that no other method of propagation is needed. *S. Arnott.*

THE BEST DWARF LINARIAS.

ALTHOUGH some of them have earned the reputation of being pests, and nearly all creeping species are apt to trespass unduly, even to the extent of defying control, the dwarf *Linarias* are, in the main, a useful and charming group. *L. Cymbalaria* (Kenilworth Ivy) and *L. hepaticaeifolia* are the most aggressive. The former, in particular, should always be given a safe place, and the latter, pretty as it is, is certainly best excluded from the rock-garden.

Of these creeping, perennial kinds, *L. acutirloba* is the smallest. This is a delightful little plant for steps, or for covering the shady side of a stone, over which it will weave its delicate veil of hair-like stems and tiny, evergreen leaves, maintaining a succession of tiny, purple flowers throughout the summer and autumn.

L. pallida is a beautiful, Italian species, the bluish-lavender flowers being larger than those of any other of its class, and, whilst they are no less generously produced, they possess a pleasant fragrance. The leaves are three-lobed, fleshy, and of a full-toned, glossy green. There is a very lovely white form of this Toadflax, a plant of singular charm, and one which, like the type, is quite easy to cultivate in any cool spot among rocks.

From Italy comes another shade lover, *L. pilosa*, which has, in leaf and blossom, some affinity with *L. hepaticaeifolia* and *L. pallida*. But the foliage is more hairy: the under parts of the leaves are often purple-stained, and their margins are more lobed. This species is also a prolific bloomer, the plant usually being covered with its yellow-lipped, purple blossoms throughout the later summer.

L. alpina is well known as a desirable little plant, with blue-grey foliage and dainty, orange-lipped, violet blossoms, which, in a genial climate, are seldom wanting at any season. In addition to the typical plant, which is, I think, much the best, there is a pale, bluish form usually listed as var. *alba*, and a rosy-pink one, both retaining the orange spot. *L. a. concolor* is a self-coloured variety in violet, and there is a pure white variety with a yellow lip, but this I have never been able to secure.

In a warm, free soil, *L. alpina* will usually seed freely, and thus maintain a stock of sturdy, young plants, but it has a way of suddenly disappearing, and the explanation appears to be that it needs the soil to be renewed frequently, the newer the better. Thus, it has often vanished entirely from parts of our garden only to reappear with renewed vigour on some newly turned-over plot, or after top-dressing the soil with fresh loam.

Though not generally trustworthy, *L. origanifolia* (of gardens) will prove perennial in a free, gritty soil and sheltered situation. This is *Chaenarrhinum origanifolium* of Spain and Portugal, a semi-prostrate herb of about six-inches, with small, dull-green, hairy leaves and short racemes of purple blossom with a daub of orange-yellow at the throat. Where the soil is inclined to be cold and stiff this species should be treated as an annual and propagated from seeds or cuttings. A. T. J.

The *Phyllodoce* are propagated by seeds, cuttings, and layers, on similar lines to those adopted for the dwarf Heaths. It is also possible sometimes to sever small pieces from established clumps carefully and propagate the plant in this way.

The plants thrive best in a compost consisting principally of peat. Found growing wild under cool, moist conditions, these should be imitated in cultivation so far as possible by planting in positions sheltered from the mid-day sun. No better homes for the *Phyllodoce* can be found than the lower pockets of a rock-garden, facing west, sheltered from the east and south by large boulders.

P. Breweri (syn. *Bryanthus Breweri*) was first collected by Mr. W. H. Brewer between 1860 and 1862 on the rocky mountain slopes of the Sierra Nevada, California, at an elevation of between 9,500 feet and 11,000 feet. The plant is described as covering considerable areas in some places. It is

moist conditions to ensure its success. As the following names suggest, the synonyms of this interesting British plant are numerous: *Andromeda coerulea*, L.; *A. taxifolia*, Pall.; *Bryanthus coeruleus*, Dipp.; *B. taxifolius*, A. Gray; and *Menziesia coerulea*, Sm.

P. empetrifolia grows six inches to nine inches high and is of dwarf, Heath-like habit. The leaves are linear, one-quarter to three-quarters-of-an-inch long. The solitary, reddish-purple flowers are borne during April and May in the axils of the leaves, near the tops of the shoots. This species is a native of Western North America and was first introduced to British gardens in 1810. It is the most free in growth and the easiest *Phyllodoce* to cultivate in our gardens. Figured in the *Botanical Magazine*, tab. 3176, it has at various times been included in the genera *Bryanthus* and *Menziesia*, but always with apparently the same specific name of *empetrifolia*.

P. nipponica is a dainty, dwarf evergreen

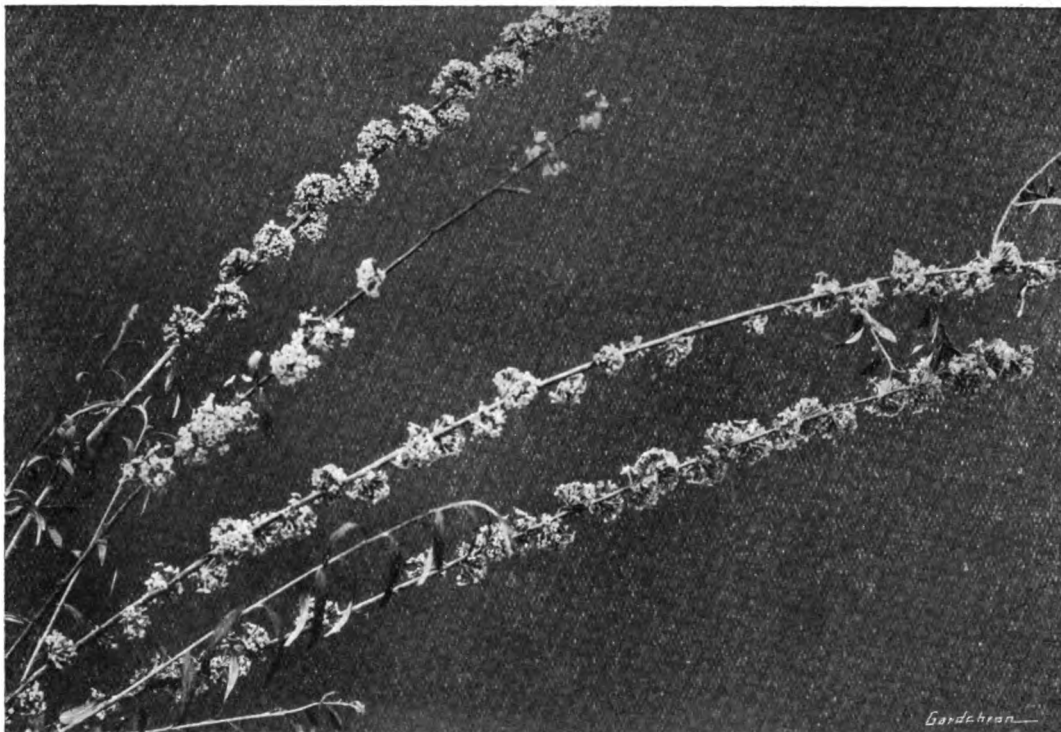


FIG. 12.—BUDDLEIA ALTERNIFOLIA.

TREES AND SHRUBS.

PHYLLODOCES.

THE members of the genus *Phyllodoce* form a small group of dainty, dwarf, Heath-like plants, varying from about four-inches to ten-inches to twelve-inches in height. Five species are included in the *Kew Hand-list of Trees and Shrubs*. They are natives of Europe, North-west America, North Asia, and Japan. A sixth species, *P. glanduliflorus*, a native of the Rocky Mountains, Oregon, Alaska, and Sitka, was cultivated a few years ago by Mr. Murray Hornibrook, at Knapton, Queen's County, Ireland.

All the *Phyllodoce* have at one time or another been included by various botanists in the genus *Bryanthus*, but most authorities now confine this genus to a single species, *B. Gmelini*, a native of Kamtschatka and Behring's Island. The plant grown as *Phyllodoce erectus* in some gardens, and in others as *Bryanthus erectus*, is a bigeneric hybrid, *Phyllodoce empetrifolia* × *Rhododendron Chamaecistus*. The name *Phyllodoce erectus* is now generally preferred.

figured in the *Botanical Magazine*, tab. 8146, and flowered at Kew in 1906, where the plant was raised from seeds received ten years previously from Baron von St. Paul, of Fischbach, Silesia.

It is a dwarf, tufted evergreen, six inches to twelve inches tall (Fig. 13); the leaves are linear, up to three-quarters-of-an-inch long, and glossy green; the bright purplish-rose blossoms are produced during May in terminal racemes one inch to three inches long, the individual blooms being half-an-inch in diameter, and broadly campanulate. Flowering freely, this species is attractive in the alpine garden or rockery, and planted in a group along the front of narrow borders of dwarf shrubs.

P. coerulea is a native of the cold regions of the northern hemisphere—Asia, North America, and Europe, including Britain, being found in Perthshire. It is a dwarf plant of tufted growth averaging six inches to nine inches in height, with linear leaves up to half-an-inch in length. The blossoms, produced singly or from two to four in an umbel, are borne from May to July. They are nodding, pitcher-shaped and bluish-purple in colour. This *Phyllodoce* in particular requires cool,

of tufted habit with small upright stems four inches to nine inches high. It has quite small, linear leaves, under half-an-inch long, freely disposed on the branches. As the illustration (Fig. 14) indicates, the flowers grow singly in the axils of the leaves at the ends of the branches. They are open campanulate, white, tinted with pink, and open during May. This is the plant figured in the *Botanical Magazine*, tab. 8405, as *P. amabilis* in 1911. Doubt was expressed at the time regarding its origin. Since then it has been identified as *P. nipponica*, a Japanese species named and described by Makino. The plant is one of the daintiest of the family and a charming subject for a sheltered nook in the rock garden. *P. aleutica*, a species from North Asia and North-West America is also in cultivation. A. Osborn, Kew.

BUDDLEIA ALTERNIFOLIA.

THIS very distinct *Buddleia* (Fig. 12), with alternate leaves, was described by Maximowicz in 1880, but it was not introduced into cultivation until about 1916, when seeds were sent home from Kansu, China, by the late-

lamented collectors, Mr. William Purdom and Mr. Reginald Farrer. *B. alternifolia* is a deciduous shrub of free growth, said to attain eight-feet to ten-feet or more in height. Having wide-spreading, arching branches the bushes usually measure more in diameter than height. Healthy plants make vigorous, young growths, several feet in length, in one season. The alternate leaves are dull green above and glaucous on the underside, one-and-a-half-inch to four-inches long and one-quarter-inch to a half-inch wide. The lilac-purple blossoms are very freely borne, crowded in clusters from the joints along the growths of the previous year (Fig. 12.) They are about one-quarter-inch wide and fragrant. The flowering season is June and early July.

This alternate-leaved *Buddleia* is without doubt one of the most distinct and useful additions to our hardy flowering shrubs introduced from China during recent years. Thriving well in garden borders of suitably cultivated soil, it is particularly showy for sloping banks, notably by the waterside. In the last-named position plants in Mr. Lionel de Rothschild's garden at Exbury, and others quite close to the side of the Lily Pond at Kew approach the ideal. Other likely positions are above low terrace walls over which the lax branches can hang, and high up on large rock gardens with the bushes overhanging big boulders.

Increase is by seeds, layering and cuttings. Inserted now in a close propagating frame without or with slight bottom heat the cuttings soon root. As the flowers are produced on the wood of the previous year, often so closely clustered as to hide the branches, whatever pruning is necessary is best done when the flowers have faded in July. Assuming there is space for the bushes to increase in size all that is necessary is to remove the old flowering stems bearing no vigorous young shoots, and perhaps to cut out one or two of the oldest branches down to the base, should the bushes be crowded with stems. *A. O.*

DAVIDIA VILMORINIANA IN FRANCE.

For the past two or three years *Davidias* have made a conspicuous display during their flowering period in France. At the Arboretum of Les Barres, the old specimen of *Davidia Vilmoriniana*, first introduced by Père Farges in 1897, has flowered and fruited annually for several years. At Verrieres a layer from this old specimen has now attained a height of twenty-five feet and was a remarkable sight at flowering time both in 1924 and 1925.

But the most gorgeous sight has been provided this year by a wonderful tree well over thirty feet high in the Arboretum of La Fosse, near Vendome, owned by Mr. Gerard, a wealthy manufacturer. The specimen was absolutely smothered from top to bottom with its large, hanging, paper-white bracts, some of which were so much as eight inches long and four inches wide. The tree was planted on the spot some twenty years ago and came from the famous Veitchian Nurseries; it is therefore one of the earliest importations of Mr. Wilson from China.

This example of the flowering of a *Davidia* (Fig. 11) should interest amateurs and encourage them to plant specimens in good, deep soil and a moist and somewhat shaded position which it seems to particularly relish. There is no doubt that the tree becomes more and more floriferous as it attains age and size, indeed it is not before it has come to a considerable size that it begins to flower abundantly and show its natural splendour. *C. L., Paris.*

AZARA MICROPHYLLA VARIEGATA.

The above is evidently a new plant, for I can find no record of it in the lists to hand, nor in books. There is a plant of it in the gardens of the Royal Horticultural

Society, Wisley. It is about two feet high or a little taller, and is planted against the wall of the Laboratory.

The dark, glossy, evergreen leaves have a broad and well-marked silvery variegation. Indeed, it is so bright and well contrasted with the green colour as to recall the bright variegation of *Quercus Cerris variegata* of Loddiges of Hackney. The brightness of this may be imagined from the old garden



FIG. 13.—PHYLLODOCE BREWERI.

(see p. 27).

or nursery names of *Q. Cerris argentea*, and *Q. C. elegantissima*.

The *Azara* is also as well marked as the Silver Queen Holly, and it is to be hoped will prove as hardy as the type. An older plant is *Azara integrifolia variegata*, but the variegation is yellow and less distinct. *J. F.*

EVERGREEN RHODODENDRONS IN THE UNITED STATES.

It is of interest to learn from the *Bulletin* of the Harvard Arboretum that comparatively few of these plants can be cultivated in New England. Three species of eastern North America are hardy here, as are *Rhododendron Smirnowii* of the Caucasus, and hybrids of still uncertain origin of *R. caucasicum* of the same region. In south-western China is found the greatest number of these plants, and hundreds of new species have been discovered there in recent years and introduced into England, where many of them have already flowered in Cornwall, a region particularly well suited to the growth of these evergreens. Unfortunately only one Chinese species, *R. micranthum*, from northern and western China, which has little to recommend it as a garden plant, is hardy in the Arboretum.

Most persons in New England who think and talk about Rhododendrons have in mind the hybrids raised in Great Britain, in great variety between the eastern American *R. catawbiense* and primarily one of the Himalayan species, *R. arborescens*. There are hundreds of these Rhododendrons with beautiful foliage and flowers varying from deep red to pink, rose-colour, dark purple, and white. They are usually grafted on *R. ponticum*, a tender plant which appears to affect the hardiness of these hybrids. The first Anthony Waterer of the Knaphill Nursery at Woking in Surrey, from whom most of the large collections of these hybrids have been obtained in the United States, used to propagate his best varieties by layers. Such plants have proved hardier in that country and longer-lived than the plants grafted on *R. ponticum* stock. Among the handsomest and hardiest of the Waterer Rhododendrons may be mentioned *atrosanguineum*, Charles Dickens, Mrs. C. S. Sargent, Henrietta Sargent, *catawbiense album*, *album elegans*, *roseum elegans*, H. W. Sargent, *discolor*, Melton, *album grandiflorum*, *purpureum elegans*, and Lady Armstrong.

In November, 1908, the Arnold Arboretum received from T. J. Seidel, in whose nursery near Dresden is one of the greatest collections of hardy Rhododendrons, a number of his *catawbiense* hybrids. Seidel uses as stock for his hybrids one of the hybrids of *R. caucasicum* called Cunningham's White, which was raised about 1830 by James Cunningham in his nursery near Edinburgh by crossing *R. caucasicum* with *R. ponticum* it is said. This makes a hardier stock than *R. ponticum* and is easily and cheaply propagated from cuttings. The plants on this stock are dwarfier than those which have been raised in England and appear to be generally hardier. In the Seidel collection in the Arboretum are the following named varieties: Adalbert, Adam, Alarich, Albert, Annedore, Anton, Arno, Attila, August, Bella, Bismarck, Calliope, Daisy, Desiderius, Diana, Donar, Echse, Eli, Eva, Fee and Viola.

There is much difficulty in the U.S.A. with the cultivation of both the English and German hybrid Rhododendrons. The leaves suffer seriously from the attacks of the lace-wing fly, and to destroy this it is necessary to spray the plants two or three times during the year. The plants require a deep mulch in winter, and some of the varieties planted in exposed situations are better for a winter covering of evergreen branches. It is no longer possible under the Federal laws to import these plants with soil at their roots, and American nurserymen who may still have a few plants ask such exorbitant prices for them that it is foolish to buy them. In the future perhaps some American nurserymen will take up the propagation of these hybrids on stock of Cunningham's White or some other of the Caucasian hybrids, but until this is done the cultivation of plants established in the United States or of new collections of these plants, is not promising.

FORESTRY.

REASONS WHY WOODS DO NOT PAY.

THERE are at least three main and several minor reasons why timber cultivation in certain woods and plantations has not turned out a profitable undertaking. These are:— (1) want of affinity between trees and soil; (2) mixing several species in one and the same wood under the pretext that if one did not succeed another probably would; and (3) faulty methods of formation and management of the plantations.

The relationship of trees and soil has received far too little attention in the past, for while a few species, and these mainly the less profitable kinds, will succeed when planted under almost any soil conditions, there are others that will only produce the maximum amount of the best quality timber and keep free from disease when planted on the particular soils for which they have been found best adapted.

Wrongly-formed plantations are, unfortunately, far too common, in so far at least as adaptation of soil and trees are concerned, the results being that, financially speaking, the woods are a failure, and proprietors, in consequence, fight shy of further planting operations.

On several occasions I have examined and reported on such woods in various parts of the country, one of the most interesting of which was a large plantation of pure Oak, for the successful culture of which the soil was quite unsuited, the result being that in sixty years the average cubic content of each tree was a little over ten cubic feet. Yet this particular class of soil was eminently suited to the production of a heavy crop of Sweet Chestnut, as was clearly demonstrated by the growth of a considerable area of this tree at a short distance away on exactly similar soil. Other instances could be given, such as a gravelly area of soil that was planted with a crop of Larch, the result being that the trees were "pumped" or rotten at the core, and had to be cut down when twenty-five years old.

When pressing home the question of extensions of plantations, I have more than once been confronted by the statement, that past experience does not warrant further expenditure in that way. That such is true cannot be denied, in many instances at least; but then, as above stated, faulty methods of formation and management are alone responsible for the failure.

In the formation of new plantations there should be no haphazard system of planting a mixture of trees in one and the same plantation, under the mistaken idea that if one species does not succeed another will. The intelligent forester knows perfectly well which trees are best suited to the particular classes of soils with which he has to deal. Throughout England and Ireland, and less so in Scotland, numerous woods of a profitable kind were formed over a century ago, yet woods and belts are to be seen that have never even recompensed the owner for the cost of planting, much less the rental of the land. There has been far too much mixed planting, in which rough-growing, unprofitable trees, of the cheapest kind for timber producing purposes, have been largely employed in the formation of woods and plantations.

Of timber cut during the war, a large proportion was found to be unsuited even for second-rate purposes, and in some cases as much as fifty per cent. could not be profitably employed. Much greater attention than was formerly the case has of late been brought to bear on the question of the best and most profitable trees to plant in a purely commercial sense or for the value of the timber they produce.

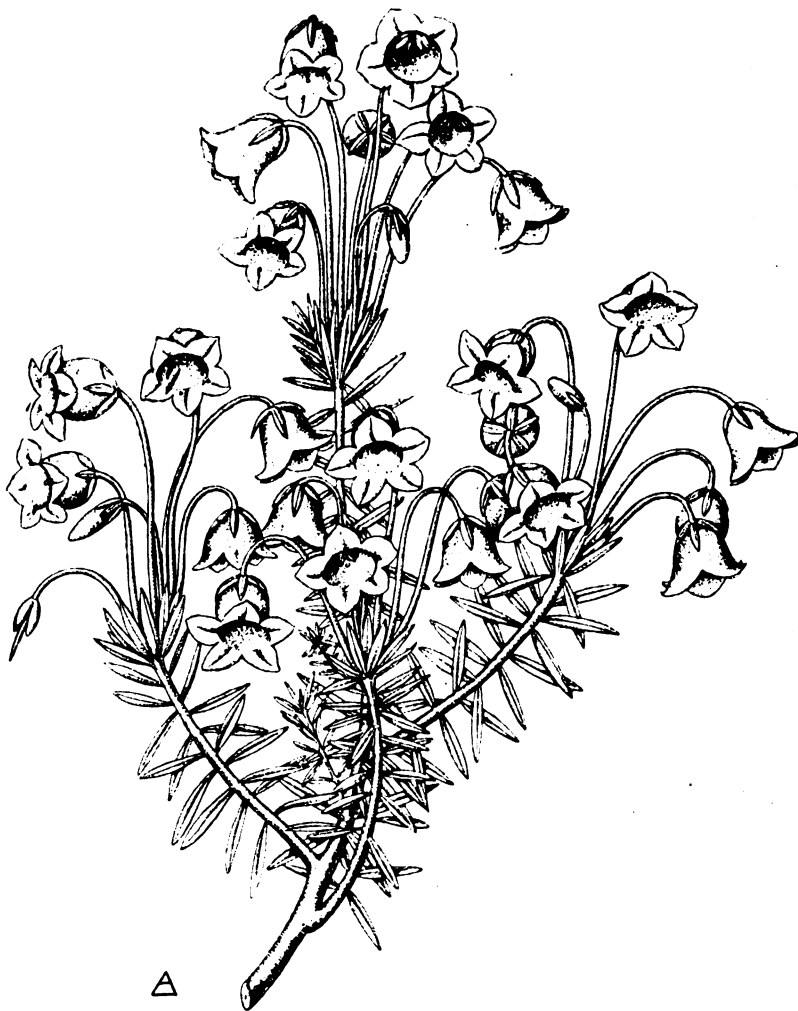
Heretofore, in too many cases, the main

object in tree planting seemed to be to get the ground covered quickly with arboreal vegetation, little thought being given to the ultimate value of the trees for timber-producing purposes. Far too often, also, the quality of the trees that were used did not receive that attention that the importance of the case demanded, and crooked, badly-rooted, bark-bound nursery refuse was made use of under the pretext of cheapness. In the end it pays many times over to purchase young trees that have received a proper course of nursery treatment in the matter of regular and systematic transplanting and pruning, than to use others at one-half the cost that are wanting in fibrous root formation and, in consequence, are lanky, leaderless,

admixture of Oak. The famous Aberdeenshire forests of Scotch Pine, such as Ballochbuie and Glen Tanar, are composed chiefly of our native Pine. Other instances are the Oak woods of Surrey and Sussex, the pure Ash plantations of Bedfordshire and other counties of England.

By far the most profitable Ash plantations which I have had to deal with were those on the Woburn Estate, Bedfordshire, where the trees were all of the same kind, while the cleanest and heaviest crop of Alder, and for which the highest price was paid, was on swampy land on a Kentish property, where the trees of this kind stood at eighteen-feet apart all over the ground.

The Hornbeams in Epping Forest, the



A

FIG. 14.—PHYLLODOCE NIPPONICA (see p. 28).

and often in a bark-bound and generally unhealthy condition.

Trees that have been regularly transplanted take quickly to a change of soil and new situation, and are not readily upset during stormy weather, evils that constantly threaten the badly-rooted and unhealthy tree.

With reference to pure or mixed plantations, there can be little doubt, judging from the value of existing plantations of pure timber as well as records of sales of past years, that the greatest profits have been derived from plantations that were composed mainly of one and the same kind of tree. In the north of Scotland and other parts, the highest prices have been paid for pure Larch plantations, and in the Chiltern Hills, where Beech timber of the finest quality is produced, the trees are either grown as a pure crop or with a slight

largest area of this tree in this country, and the Birch on some of the English commons, are examples of a similar kind. Again, of the common or Norway Spruce, the cleanest and most valuable timber is that produced in pure plantations of the tree, both in Scotland and England.

Like man and animals, trees are gregarious, and thrive best in communities of the same kind. With reference to Larch timber in Scotland it may be stated that a plantation of pure Larch realised at the rate of £150 per acre at the age of seventy years; another, forty-four years' planted, returned £100 per acre. The late Mr. Lewis Miller, timber Merchant, Crieff, Perthshire, informed me by letter that from 1870 to 1890 he paid £250,000 for pure Larch plantations of fifty years' growth and upwards, which worked out at £50 per acre. A. D. Webster

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MY GARDEN.

I HAVE a wood and in this wood there is a house with a woodland garden and a small rock and water garden. Let us take a walk round the latter first. There are several small pools, linked up with small ditches, and some well-weathered rock-stone has been used in its construction. On a high bank by a little waterfall is a fine mass of *Genista hispanica* and another of *Cytisus praecox* over which clammers the scarlet *Tropaeolum speciosum*, which as early as mid-June was in bloom. Two fine specimens of *Juniperus Sabina tamariscifolia* are near the water, in which is the crimson Water Lily Wm. Falconer. There are several plants of this variety in this garden and in the full sun they were a mass of wonderful deep colour.

Epimedium pinnatum does well by the stones; its brown leaves give a good colour in winter. Passing on we come to *Iris sibirica* Perry's Blue, one of the best varieties, and *I. orientalis*, which is surpassed by its var. *Emperor*, a much taller variety with larger flowers of a deeper colour. *Phragmites communis variegata* and *Menyanthes trifoliata*, the Bogbean, grow together in a corner of a pool. I found a lot of larvae of the Elephant Hawk Moth feeding on the latter, and it puzzled me how the nearly full-fed larvae got from leaf to leaf to feed without falling into the water, as in many cases the stems of the plant were nearly, if not quite, submerged. *Rodgersia pinnatifolia*, with its large bronzy leaves, is nearby, but I fear it is rather too dry and must be moved. A fine *Acer palmatum purpureum* stands near the outlet and in the stone paving leading over the water are many self-sown plants of *Caltha palustris*, *Primula japonica* and *Astilbes*. I suppose their roots are kept moist and cool by the stones.

Podophyllum Emodi with its quaint, brownish-marbled leaves, rushes up every year, with a pale pink flower followed by an enormous egg-like fruit which turns a vivid scarlet when ripe. *Mimulus luteus* and *M. Bartoniensis* flower profusely with their roots in moisture and *M. cupreus* spreads everywhere. *Rodgersia podophyllum*, *Funkia Sieboldii* and *Astilbes* grow strongly close by, with *Primula Asthore* seedlings (*P. Beesiana* and *P. Bulleyana* hybrids) and *P. rosea* near the water.

Saxifraga peltata throws up its big heads of bloom, followed by its large green leaves, which turn a good colour in autumn. Its "rhizomes" spread further and further

afield every year. *Polystichums*—one cannot record all their long names every time, let us say the plumose varieties—are growing in the stones. They are, to my mind, the finest of all hardy Ferns. *Iris sibirica* Mrs. Perry, a pretty flower, blooms profusely every year, and near by there is a patch of *Primula japonica* which sows itself every year, and amongst them is what is evidently a cross between *P. japonica* and *P. pulverulenta*, a fine crimson, resembling the latter in habit with the colour of the best crimson *japonica*. *Lythrum virgatum* has seeded itself everywhere and many good colours have appeared. This is welcome on account of its display of colour when most flowers are past. On a dry, hot bank above the water, *Cistus crispus* is flowering happily. The *Cistus* are good plants for hot, dry places. *Wistaria sinensis* hangs over the water and with this is *Cerasus Shirofugen*, one of the best double-flowering Cherries and a late variety, producing large, pendulous flowers of soft-pink which change almost to white. *Caltha polypetalis*, which needs keeping in bounds, as does *Ranunculus lingua grandiflora*, grow together. There is an interesting story of the migration of the former from the Pope's Garden, but is it true? *Primula Wardii* and *P. vittata* grow at the edge of a ditch and near by is a big patch of *Trollius europaeus*, an old garden plant, but one of the best, with its lovely, cool-looking, pale yellow blooms. Across stepping-stones may be seen *Nymphaea Escarboucle*, a huge crimson flower—the plant is fast out-growing its home. An old Japanese *Wistaria*, neither *sinensis* nor *multijuga*, hangs over the water, and for the first year has not made much show of bloom. *Peltandra virginica* with its handsome Arum-like leaves, is growing with *Butomus umbellatus*, but I fear it is too shady at times for the latter, which never flowers here, though it does lower down in full sun. *Acer palmatum purpureum* and *Spiraea palmata* give a fine bit of colour in their season, and on a dry bank is *Cistus florentinus*, *floribunda* or *profusiflora* or some such name ought to be given to it, for in its season it is marvellous the amount of bloom it gives—here to-day, gone to-night, and another to take its place.

Miscanthus saccharifer—a handsome, golden Grass, which I seldom see, is one of the next things to record. It grows six-feet high and is most effective. *Osmunda* in variety and *Struthiopteris germanica*, the Shuttlecock or Ostrich Fern, grow together, but the latter does not grow to the dimensions I have seen near here.

Caltha palustris, the purple-stemmed variety, grows in the mud, and it is very much more attractive than the common form. *Typha angustifolia* grows with the commonly-called Bullrush. The former is a smaller form, but is just as rampant as its big brother.

Nymphaea Ellisiana, with its rich, crimson-scarlet blooms, which stand up slightly out of the water, is flourishing here, and *Aponogeton distachyum*, the Water Hawthorn, seeds itself everywhere. *Iris Pseudacorus* and its pale form, *Bastardii*, and *Acorus Calamus variegata*, with handsome, variegated foliage, are growing in the water. *Glyceria spectabilis variegata* must be watched, as it is a rampant grower, and while it is a pretty grass one can have too much of it. Next to record is a fine lot of *Primula Asthore* seedlings. Their parents are here, too, and have been here for seven years; and their progeny have spread all over the place. Those of *P. Bulleyana* show more orange and yellow in their colour. They come and go, but their parents seem to remain for longer than any. Across the path are *Dodecatheon Meadia* seedlings, very strong, and flowering freely; but the foliage soon flops down, and looks as if it was dry and flagging. *Primula Wardii* grows in a moist space near the water and comes up

every year, but it seems to be a very much surface-rooting plant, and cannot withstand dry conditions and in winter wants watching that the crowns do not get cast up after a frost. *P. chrysopa*, a larger plant, and *P. involucrata* are of similar habit.

Plants of *Sagittaria* in double and single varieties are throwing up their arrow-head leaves, and follow on behind the double forms of *Caltha palustris*, *C. montrosa* fl. pl., and *C. p. fl. pl.* The former comes out a good deal later than either the common form or fl. pl., and its habit is more like that of *C. polypetalis*, sending out "runners" which take root if given the opportunity.

Scirpus zebrinus throws up its green and white-banded stems, and should be grown in a place sheltered from the wind. This plant seems to get blown down very easily.

Primula rosea, now ripening its seed, has sown itself among the rocks. There is one plant which has particularly vivid-coloured flowers. I wonder if this is what is known as Brockhurst variety? *Primula glycosma* has also seeded itself freely, but its flowers are neither large nor beautiful, and I should call it an inferior *P. Poissonii*. One thing I like about it, and that is the scent, chiefly, I believe, in its foliage, and this, I have noticed especially after a rain, in the same way as we get a delicious perfume of the Gum *Cistus* *C. ladaniferus*, *C. cyprius*, and *C. Loretii*.

Astilbes and *Lythrums*, the latter chiefly seedlings from *L. virgatum* and *Salicaria*, will soon be a bright bit of colour. *Epilobium angustifolium* has been banished. It is far too rampant for a small garden, and it is a hard thing to kill—you think you have killed every bit, but next spring up it comes. Its tiny, creeping relation, *E. nummularifolia*, is just as bad in its way. It comes up everywhere. Plants of *Spiraea gigantea* in its rose-coloured form are now four-feet high, and will go on up to ten-feet, according to the weather. Last year, in the wet summer, they attained a height of twelve-feet, as they had a drain-pipe always keeping them supplied with water.

Iris chrysographes was magnificent last year, but for some reason it disappeared last winter with the exception of one plant. It is a pity that its flowering season is so short. Its purple is most intense, looks like velvet, with a thin, gold line in the centre of each fall. Plants of *Iris Kaempferi* are just opening, and *I. versicolor* has been very good this year.

Last but not least in its effectiveness, is *Myosotis palustris*, which gives such lovely masses of soft blue; common it may be, but it is very lovely. *The Owner*

NOTES FROM A WELSH GARDEN.

Dry as it has been throughout the month of June shrubs and plants have, for the most part, been unusually satisfactory, growth being above the average and bloom abundant. Among the former *Fremontia californica*, a bush some ten feet high, has been and is still a wonderful sight, every branch being enveloped in a blaze of large golden-yellow flowers. *Abutilon vitifolium* has attracted no less attention than the former, its clusters of Mallow-like blossoms in a cool bluish-lavender being singularly lovely. *Olearia semi-dentata*, undoubtedly the most beautiful of the genus, is adorned with its fragrant Daisy-flowers, nearly two inches across and of a soft lavender-purple centred with a broad disc of a darker shade, whilst in much the same tone are the pretty clusters of *Buddleia alternifolia* (see Fig. 12).

Styrax Wilsonii, which has proved quite hardy here, is an elegant shrub that may always be depended on to produce its nodding, milk-white flowers about mid-summer and it appears to be as well able

to resist drought in our light soil as the *Leptospermums* and *Cistus*. Among the latter is *C. ladaniferus* var. *immaculatus*, recently the recipient of an Award of Merit at Vincent Square. This is quite, to my mind, one of the finest of the whites, none other unblotched species or variety bearing flowers of such remarkable size. *C. recognitus* is also in bloom, this being a rock-Rose with—if I may beg to differ from some authorities—a closer affinity to *C. Loretii* than any other. If *C. purpureus* still holds an unique place among the crimson and pink rock-Roses by reason of its distinctive blotch, *C. Gauntlettii* can, I think, claim a foremost position among the purely self-coloured varieties other than white, its large and deep carmine-crimson flowers being exceptionally striking. In the clear pinks *C. creticus*, *C. tauricus* and the uncommon and tender *C. vaginatus* are all worthy of special note.

If the abundant sunshine has been enjoyed by the foregoing, the *Leptospermums* have revelled in it, even the dryness of our thin, poor soil having no terrors for these southerners. A good form of the white-flowered *L. scoparium* has, up to the present, been the most satisfactory, the elegant, fine-leaved branches being thronged with the Hawthorn-like flowers for many weeks.

Beautiful as they are, *L. s. Nichollii* and *L. s. Chapmanii* do not bloom so freely here nor do they make so rapid a growth as the above, and their ruby-crimson flowers are apt to bleach in strong sunshine. With these and others now in bloom are *L. laevigatum* and *L. stellatum*, with small white flowers and larger, more leathery leaves than is usual with the members of this genus.

With its downy, obovate leaves, a foot in length and half as wide, with white undersides, *Salvia verbascifolia* strikes an uncommon note in a mixed border. This herbaceous perennial is apparently quite hardy and its branching spikes, up to two feet in height, of drooping, milk-white tubular flowers, enveloped in silky hairs and flecked with violet at the lips always arrest attention. *Geranium refractum*, with the trailing habit of *G. Wallichianum* and much the same style of leafage, is also a plant not often seen in gardens; its large blooms are, when first expanded, a very charming fresh rose-pink. *Iris hexagona Lamancei* is also here, flowering freely in a very dry soil beneath the towering *I. aurea* and *I. Delavayi*. *Morina longifolia* is an attractive plant which does not appear to resent drought when there is sufficient depth of soil, and a group of some hybrid Horned Poppies (*Glaucium*) have been no less happy.

But, given sufficient moisture below, few flowers appear so thoroughly to enjoy great heat as do the *Mimulus*s, and no group of plants will give more gorgeous masses of colour. From *M. luteus* and *M. Bartoniensis* (*cardinalis* × *Lewisii*) which make a forest of two foot growths with the Water Forget-me-Not (*Myosotis palustris* var. *semperflorens*), to the little Whitecroft Scarlet, there is a wide range of gorgeous colours. Among these, Whitecroft Scarlet, Burnettii and Coronation are perhaps the most striking in the self-coloured, intense coppery-scarlet shades, whilst *M. Croftonianus*, rich cherry-crimson, strikes an unusual note of colour in their class. Grouped among native Ferns on a bank raised well above the stream-side, *Geranium anemonaeifolium* has made a remarkably striking display of colour since May, and the bold plants, each three feet high and more in width, look as if they would continue their amazing succession of rosy-crimson, ruby-eyed flowers for many more weeks. In such company *Borago laxiflora* is an admirable plant, and both *Artemisia salicifolia* and *Lindelia spectabilis*, with its deep sapphire flowers, are first-rate. Here also good use is made of those

pleasant little shrubs, *Spiraea decumbens* and the closely-allied *S. Hacquetii*, whilst there is no prettier ground coverer for summer flowering in such cool places as these than *S. (Eriogynia) pectinata*.

If the drought checked the progress of many subjects others have been forced into premature blossoming. Thus, *Tropaeolum speciosum* showed the first of its brilliant flowers soon after Midsummer Day and it is now festooning some *Azalea* bushes with its ropes of scarlet. *Gentiana septemfida* was equally early, six weeks before its normal date here. *Lavatera Olbia* is blooming long

Though the rock garden for the most part quickly surrendered to the fierce heat and extreme dryness some few plants have come bravely through the ordeal. Where *Helianthemums* were withered beyond recovery for this season *Linum salsoloides* and *L. monogynum* have been better than usual. No less can be said of *Aster Farreri*, *A. Pattersonii* and *A. brachytrichus*, *Crepis incanus*, the lovely lavender and white *Scutellaria Brittonii*, *Verbena radicans*, *V. chamaedryoides*, *Prunella incisa coccinea*, the excellent *Potentilla nepalensis* var. *Miss Willmott*, all forms of *Geranium sanguineum*,



FIG. 15.—RHAZYA ORIENTALIS.

(see page 33).

before its time. Some varieties of *Anemone japonica* are nearly two months ahead of their scheduled date, and *Schizostylis coccinea* is no less precocious. As for *Mimulus glutinosus*, it has not been so full of colour at mid-June for many years. This charming Californian shrub we have in three distinct forms, the most robust and that with the largest blooms coming nearest to the type plant of Northern California, its flowers being a warm golden buff. Then there is one whose blooms are a rich velvety maroon and an intermediate form with smaller, almost pure scarlet, blossoms. All have proved highly satisfactory shrubs on our dry, sunny slopes, and it is very seldom they are injured by frost.

including the fine white variety and *G. nepalensis* of the lists, the creeping *Thymes* and most of the dwarf *Hypericums*, especially *H. olympicum* var. *citrinum*, have all helped materially to prolong what might have been a briefer season. *Lithospermum petraeum* has also upheld its reputation as a drought resister and a square yard of old wall covered by *L. intermedium*, with masses of *Veronica chathamica* trailing over from above is very delightful. Among other plants worthy of special mention are *Campanula muralis* var. *Muretti*, *Viola gracilis*, Royal Blue; *Armeria Vindictive* and that fine old Pink—now rare—*Dianthus Wolley* Dod. A. T. Johnson, Rq. Wen., Talycapn, North Wales.

GREENWICH PARK.

GREENWICH PARK is included amongst the public parks in the metropolis belonging to the Crown, as distinct from those under the control of the Municipal authority of London. The largest of these Royal Parks is Hyde Park, which, including Kensington Gardens, has an area of six hundred and twenty-one acres; the second largest, Regent's Park, embraces four hundred and seventy-two acres, and then comes Greenwich Park with one hundred and eighty-eight acres. The last is situated in a densely populated district in the South-East of London and adjoins Blackheath Common, which is one of the largest of London's commons, having an area of two hundred and sixty-seven acres, so that park and common combined constitute one of the largest open spaces in the metropolis.

This park has existed at Greenwich since 1433, but as it is now laid out it dates from the time of Charles II, who commissioned Le Notre to undertake the work.

Greenwich Park is said, on the authority of Mr. A. D. Webster, to contain by far the finest collection of trees and shrubs in any of the London parks, and the first impression the visitor has on entering the main entrance is the grandeur of the huge Sweet Chestnuts which, together with many old Elms, are said to have been planted at the instigation of Evelyn in the seventeenth century. One of the Chestnuts has a girth of nineteen-and-a-half feet and there are several others almost as big.

The greatest attraction from a gardening point of view is the enclosed part known as the Flower Garden. This pleasure ground is arranged quite differently to that commonly adopted in public parks, and, standing in the centre of it, one would imagine oneself to be in the midst of a beautiful garden attached to some stately home in the country. There are lawns, flower beds, and beautiful trees all in the happiest association. The last include groups of Cedars, *Ailanthus glandulosa*, *Pyrus salicifolia*, weeping Elms, scarlet Thorns and other beautiful flowering and foliage subjects. In a dell, where the conditions are very favourable, many uncommon trees and shrubs succeed amazingly. Magnolias attain to the size of very large trees and these usually flower twice a year. *Eucalyptus pulverulenta*, which stands out conspicuously by reason of its beautiful blue foliage, survives the winter without injury, and other interesting woody subjects, all of which have made fine specimens, are *Desfontainea spinosa*, *Ilex integra*, *Colletia spinosa*, *C. cruciata*, *Idesia polycarpa*, *Phillyrea decora*, *Berberis Bealii*—some of the finest specimens of this plant we have seen, which we are informed pervade the park with perfume when in flower from November onwards; *Viburnum Carlesii*, of which there are several fine specimens; *Eucryphia pinnatifolia*, Bamboos of sorts, *Umbellularia californica*, *Cercis Siliquastrum*, the Judas Tree; *Nuttalia cerasiformis* and the hardy Orange, *Ægle sepiaria* (syn. *Citrus trifoliata*), which last year was covered with fruits.

In one of the shrubberies forming a boundary to the enclosed garden, there are three exceedingly fine trees of *Acanthopanax ricinifolium*, a most useful tree for park planting, as the stems are covered with short, thick spines sufficient to deter any juvenile who aspires to climb them. Very pretty also were trees of the golden Mountain Ash and, in their season of flowering, Japanese Cherries are an imposing feature. Catalpas also flourish in this interesting garden and on either side a broad, herbaceous border is backed with a very pleasing shrubbery.

Many large flower beds are cut out in the lawn, some of oblong shape, eighteen-feet by twenty-two-feet, and circular ones, thirty-feet in diameter. The beds are planted with various subjects; at the present time several

of them are filled with dwarf Polyantha Roses relieved with a few standards of the same plants not more than eighteen-inches or so high. The Roses are grown in pots and plunged, so that when their season of flowering—which Mr. Findlay informs us lasts some two months, is over, the beds may be furnished again with other subjects. One of the most successful varieties for the purpose is Edith Cavell, and another bed contains the dwarf Echo with standards of Ellen Poulsen. These Roses are grown in six-inch pots; those who have to furnish flower beds during June and July will find dwarf Polyantha Roses admirable for the purpose, and with proper treatment the plants may be used again and again each succeeding year.

Another bed is planted with the scarlet Dahlia Amy Barlett, a very dwarf variety with dark foliage and dark leaves. It is interspersed with the double Gypsophila edged with *Centaurea candidissima*, the grey of these plants associating finely with the dark-leaved Dahlia. One of the most successful of all the beds is planted with double Shirley Poppies. The double variety lasts longer in bloom than the single form, and the flowers are as handsome as those of double Begonias; in fact, they may be likened to small blooms of these flowers.

A very striking patch of colour is furnished by a large, oval bed filled entirely with *Anchusa Pride of Dover*, a dwarfier and better variety than the well-known Dropmore. Other beds contain Pentstemons mixed with Gladioli, and several are gay with Antirrhinums. Mr. Findlay has used Antirrhinums as a ground work under Dahlias with great success. The Antirrhinums entirely hide the ground and the Dahlias soon grow above them, the two together making a much better effect than when the Dahlias are grown by themselves. Of the Antirrhinums, three of the very best are Eclipse, a very strong-growing, rich-crimson sort; Exquisite, soft pink; and Picture, pale chrome and yellow mixed. Delphiniums are also employed extensively and no fewer than one hundred named varieties are included, but nothing is finer than the long border planted with the Rev. E. Lascelles variety near the fine specimen of the Judas Tree already referred to.

The border by the path leading to the enclosed garden is filled with a variety of bright flowers. Quite recently a wooden fence that was partly hidden with common Privet and Laurels has been done away with, and openings made into the "Wilderness," a deer enclosure, and where the wild vegetation, including much Bracken Fern, would suggest some natural country many miles from any large town. A bed of *Calceolarias* interspersed with blue *Cinerarias* has been the source of great attraction for some time past, but the effect is now passing. One of the most pleasing pieces of planting in this border is a corner group of the blue Delphinium Queen Mary associated with *Lilium longiflorum formosum*. It is very interesting to notice how fine *Lobelia tenuior* does out-of-doors in this border, which contains other interesting plants, such as *Trachymene caerulea*, the Lace plant; *Anchusas*, *Hydrangeas*, *Viscaria oculata*, *Phlox Drummondii*, which is very fine; *Nigella Miss Jekyll*, *Salpiglossis*, succeeding finely; a breadth of the old laced type of Sweet William with *Salpiglossis* over it; Sweet William Pink Beauty, *Campanula persicifolia*, Canterbury Bells, etc.

Much of the material for furnishing the flower beds is grown in a nursery which has recently been much enlarged. Everything in this nursery is in the finest condition, and some of the subjects were being prepared to take the place of others that had finished. For example, many *Hydrangeas* which had flowered were in process of ripening off and making flowering shoots for another season, whilst a batch of 3,500 *Chrysanthemums* were in readiness to be placed out-of-door a little later to give a bright effect on the Lily border and other places in autumn. Several houses in this park nursery are filled

with Lilies, and as the plants are in pots they may be made use of for a variety of purposes. *Lilium auratum* will be placed in the border where the *Hydrangeas* are almost over, and when the Lilies are past these in their turn will be supplanted by *Chrysanthemums*.

Towards the Royal Naval Hospital School the park is not so interesting as at the Blackheath end, but Mr. Findlay has created a new feature in front of the hospital, where a broad flower border has been made in front of the wall and beds of Roses formed in the grass on the other side of the path. There are nine hundred Dahlias in the long border and no fewer than four thousand Antirrhinums are used as a groundwork, but the glory of this border is the row of East Lothian Stocks which are nearly all doubles and flowering magnificently in a variety of colours; it is quite one of the features of Greenwich Park.

The celebrated Observatory is at the top of a hill, which necessitates a stiff climb from the Hospital; beyond the Observatory is the Ranger's House, and the park hereabouts contains some very fine trees and shrubs. It is not surprising to find near this old house some venerable Mulberries and Walnuts. There are many beautiful forest trees, such as the Copper Beech, the common Beech, *Quercus castaneaefolia*, Elms and a common Thorn, fifty-two feet high, one of the largest May Trees in the country. In recent years large plantations have been made of *Rhododendrons*, Azaleas and Kalmias, and in spring the whole of this part is gay with a variety of bulbous flowers.

Since Le Notre's time the care of Greenwich Park has been in the hands of many noted gardeners, all of whom have left their mark on the place, including the late Mr. Chas. Jordan, Mr. A. D. Webster, Mr. T. Hay, Mr. D. Campbell, and last, but not least, the present superintendent, Mr. R. Findlay, who, as we announced in our last issue, has been appointed Keeper of the Wisley Gardens.

PUBLIC PARKS AND GARDENS.

THE Town Council of Shrewsbury has received sanction from the Ministry of Health to borrow £2,500 for the purchase of the old Shropshire County Cricket Ground for a public park and recreation ground.

THE Ministry of Health has sanctioned a loan for the purchase of sixty acres of land at Headstone, Harrow, as a public recreation ground.

THE Town Council of Neath has under consideration a report prepared by the Borough Engineer on the development of the Gnoll Corporation estate. He suggests that the following points be considered: the provision of a yachting pond and paddling pool for children; improvement of the streams running through the estate, with the construction of weirs, cascades, rustic bridges, etc.; terraces, gardens and walks; fountains and shelters; the conversion of the lower pond for bathing and swimming, with dressing rooms and cubicles; construction of a promenade, and the provision of hard and grass tennis courts, bowling greens, croquet grounds and clock golf. He also recommends the consideration of a municipal golf course, if considered suitable by golfing experts.

THE Town Council of Rigate has decided to carry out improvements at the Redhill Memorial Sports Ground, and application will be made to the Ministry of Health for permission to borrow £4,600 for the work.

SWANSEA Corporation Parks Committee has adopted a scheme for the lay-out of Maesteg recreation ground at a cost of £2,439. A plan is to be prepared for the lay-out of Dunvant Recreation Ground.

PLANTS NEW OR NOTEWORTHY.

RHAZYA ORIENTALIS.

THE genus *Rhazya* belongs to the Apocynaceae family and is closely allied to the well-known *Vinca* or *Periwinkle*. It contains only two species, of which the one illustrated in (Fig. 15) is the only member in cultivation. As its name implies, it comes from the Orient, being found in Greece and Western Asia. *R. orientalis* is an erect growing, hardy perennial, but under some conditions forms a sub-shrubby base. The numerous stems, from two to three feet high, are clothed with alternate, ovate-lanceolate leaves, quite glabrous, each terminating in a densely flowered cyme of small flowers, which vary in colour from blue to lilac. These remind one of a *Bouvardia* in general appearance and are produced during the months of June and July.

Rhazya orientalis makes a useful border plant of neat habit and seldom requires staking, the twiggy stems being stiff and self supporting. Any good, deeply worked garden soil is suitable for its cultivation in a sunny or half shady situation. It is best propagated by means of seeds, which are produced freely in most seasons. W. I.

INDOOR PLANTS.

CINERARIA.

GREENHOUSE *Cinerarias* are almost invariably raised from seeds. In a batch of seedlings there may be a plant which, when flowering, makes instant appeal by reason of its fine colour and pleasing habit, or, if used for house decoration, its harmony with the colour scheme of the room. For the perpetuation of such particular novelties, propagation by cuttings or division of the roots may be successfully employed. This method of increase is, of course, by no means new, for the old florists' *Cineraria* was propagated from cuttings.

Details of this especial phase of culture may be briefly summarised. After flowering, cut the plants down to within a few inches of the base, shake them free of the soil and re-pot them in a lighter compost, or, if grown in quantity, plant the stools in boxes, and when growth commences break up the stools; each growth will have roots attached, and, when potted singly, will grow freely without a check. The subsequent treatment of the cuttings is similar to that adopted for seedlings. Where large batches of one particular colour are required for decorative purposes, this method may be recommended, plants raised in this manner being distinguished by a remarkable evenness of growth. Fred W. Jeffery.

HOME CORRESPONDENCE.

An Operation on a Standard Rose. The note (June 20, p. 440) describes an instance of what may be accomplished in plant surgery. This particular operation may be unique. Observation will show that the healing of wounds in plant life is not at all uncommon but the reverse. Take a walk by any hedgerow and note the damaged bark and branches, some slight, others very severe, that one meets on the way. Many of these badly wounded subjects are not only living but producing leaf, flower, or berry in a most natural manner. True, many are dead, especially in exposed positions where the wind has played an important part in their destruction. One could not leave the head of a standard Rose suspended, as described in the note by W., and under the circumstances the natural healing would be out of the question. It is not un-

common to see very badly damaged fruit trees in old orchards with large branches suspended, many being attached by a very slight strip of wood and bark, and these branches, although not making luxuriant growth, are otherwise healthy. The care and patience of Dr. E. C. Hardwicke, in performing the operation on a standard Rose as described, is praiseworthy and deserved success. C. Ruse.

Apple Scab.—I am pleased that such an eminently practical man as *Market Grower* should speak a good word for Bordeaux mixture and lime sulphur as summer fungicides. I have thought for some time that their value in this respect was not realised so much as it might be. It is not an easy matter to enter into the reasoning of *Market Grower* concerning the effect of these specifics. If they are capable of reducing the damage caused by Apple Scab I do not see why they cannot stop it altogether. *Market Grower* has not had such a happy

the trees I found that the sheep had been eating the twigs and the shepherd maintains that the Yew poisoned them. This is the first time that such a thing has happened, although sheep have grazed in the park for a good number of years. On looking up the *Encyclopaedia of Plants* I find the following: "The twigs and leaves of Yew, when eaten in a very small quantity, are certain death to horses and cows; but deer, it is said, eat them with impunity, and sheep and goats are said by Linnaeus to eat them." It would be interesting to hear readers' views on this subject; some may be able to state whether the Yew is harmful to sheep or not. John Buchanan, Gargunnoch Gardens, Stirlingshire.

The Biggest Wellingtonia in Britain.—I have recently come across a magnificent specimen of *Sequoia* (or *Wellingtonia*) gigantea in the New Forest. It is said to be seventy-five years of age and would therefore be one of the very first planted in the



FIG. 16.—MR. REGINALD CORY'S GROUP OF SUCCULENT PLANTS at the R.H.S. Amateurs' Show on June 30 and July 1. (see p. 18).

result. Might I suggest that it was a matter of "luck" in his case also. My own trees were cured partly owing to luck. Perhaps the trees of *Market Grower* were not cured owing to the same cause. I did leave some trees unsprayed as a control, otherwise the experiment would have been quite valueless. The trees are inspected weekly for the purpose of a report, and so far no scab can be seen upon them. I believe it is imperative to spray early, before the hyphae of the fungus have had time to become deeply seated in the tissues of the leaves. Geo. H. Copley, N.D.H., Richmond Road, Cardiff.

Yew Tree Poisoning of Sheep.—I have heard a good deal of discussion on the subject from time to time, and would like to know if the common Yew, *Taxus baccata*, is really harmful to sheep. A curious instance came to my notice quite recently. A number of sheep were grazing in a park in which are several Yew trees, some of them being accessible to sheep. Twelve sheep were poisoned; three died, and the remaining nine recovered after receiving the utmost care and attention. On examining

kingdom. At present its approximate height is 110 feet, and its girth at 4 feet from the ground is 16½ feet. If any readers of *The Gardeners' Chronicle* know of a tree of *Sequoia gigantea* taller and thicker than this perhaps they will kindly send a note to the Editors to that effect. John Weathers, Park View, Isleworth.

Lachenalia.—I venture to remind your readers that the time is at hand for dealing with these plants if the full beauty of which they are capable is to be obtained. Bulbs planted or potted up in July give a very different result, both in vigour of growth and in the lasting qualities of the bloom, as compared with those planted in, say September or October. The grand spikes, to which an Award of Merit was given at Vincent Square in February, were from plants potted up in July and were a striking illustration of the value of early treatment. *Lachenalia* are ideal plants for a cold house or frost-proof frame, and the more recent introductions include some very beautiful varieties; but to get the best out of them they should be potted during the next few weeks without fail. W. D., Streatham.

APPLE-LEAF SCORCH.

HAVING started the ball rolling on this subject it is perhaps needful for me to say the final word—at present. Most of those who have read my notes will no doubt join me in deprecating the allegation that it is I that have finally ousted potash as a sole factor in the problem of leaf-scorch; it is the records given in the Long Ashton reports (and not the inapt citation of Barley soils) which have done such ousting as has occurred in regard to the simple potash supposition which was first advocated; further, it appears that its author has himself given it up. It is now supplanted by a so-called nitrogen/potash ratio, as the effective agency in the production and fending of certain, as yet undefined, forms of leaf-scorch. I am glad that I guessed aright in concluding that really a nitrate/potash ratio was meant; why then should it not be called a nitrate/potash ratio and so eliminate one piece of guess work?

I rejoice in having given so much pleasure by the fairly obvious *lapsus calami* of potassium sulphate for nitrate, however little it may affect the main issue; and happily, I am not convicted of deliberately laying red herrings to divert from a track, which is so successfully avoided. Yet, indeed, who can say what may be the assortment of 'anions' and 'kations' in the nutrient solution with or without the later addition of silicates—by chance the sulphate may be there after all!

If other readers can read into or out of my words all that now appears in the three whole columns (*Gard. Chron.*, pp. 455, 456, June 27), I shall have to flatter myself that I wield the pen of Shakespeare or even of one of the chroniclers of Holy Writ. I know of the old Turnip tale, now almost threadbare with oft citation; and I have even met with it aptly quoted! Most readers will, I hope, have appreciated the application of the analytical figures which I mentioned, and will discount the idea that I have suggested that Apple trees can only prosper with such ratios; the "true and only nitrate/potash" ratios seem yet to be disclosed. My crude method appears to be the desire to learn this ratio. I note that potassic organic salts are free from ionisation, so hand in hand with Professor Armstrong let us dance round the sand-pots.

If you, Mr. Editor, had sufficient spare space, and I had sufficient leisure, in time we might really get some idea of the circumstances of experiment. Together, we have extracted the most valuable admission, yet vouchsafed, viz., that the so-called rain water actually contains about a quarter of a milligram per litre of potash, consequently some half milligram is always present in the residual water in each "non-potash" pot of the series; not to mention the leaching water of unrecorded amount in regard to which (*Rep.* 1923, p. 47) "Once more it was demonstrated that where plants are grown in pots which are not leached at intervals, the plants develop leaf-scorch more quickly than where leaching is carried out." This amount of potash is small, though perhaps sufficient to feed a big family of bacteria or upset some ion relations, but it may be greater if we come to learn the potash content of the other chemicals employed.

We know now that we cannot hope to cure some trees. The further Long Ashton and Hutton trials now put forward are too Neandertalian in presentation, when the several nitrate/potash ratios on the plots are divulged it will be possible to consider the light of the differences (if any), and, when the full report and analyses come forward, whether two hundredweight of muriate are equivalent to the like amount of sulphate of potash in available potash,

and in manurial effect, though apparently given indifferently.

The old order (water culture, pot, plot, field, conclusions) changes, giving place to the new promulgation at the pot stage. It would seem that we are to believe that the mechanical, physical, chemical, bacterial, &c., conditions in the sand pots are identical with those pertaining in open culture.

I had an idea that substances returned to the soil, off leaves, etc., would not be included with those actually removed, but it appears that I am in error (and may remain so, though not a chartered accountant); the French seem prone to work on principle of replacement of removals, and their agriculture seems to pay and feed the people—but does ours?

We began in uncertainty as to whether leaf-scorch was a pathological entity, and as to what was the meaning of casuistic improvement first under the simple potash notion, since replaced by the as yet nebulous ratio scheme (as also with no apparent treatment at all); now, at the close, we find ourselves still data-less and at the starting point.

In returning thanks for the kind invitation, I hope that I may be able to brave the tiresome journey to Long Ashton, when there is really something to see; I anticipate that most of the time will be taken up in the laboratory studying the technique to be employed in ascertaining the "nitrate/potash" ratio; thereby I shall be able to find out which of such of my trees as were badly scorched last year and before, will gain by potash amendment, though at present they seem perfectly healthy with no soil alteration except what the course of Nature has decreed. Incidentally I expect to envy the array of platinum, gold, nickel, and silica ware which fends the laboratory from the aberrations of the rain water tank!

Finally let me quote from the end of my last letter that "when records of carefully designed and carefully executed experiments and comparative estimations are available, it will be time enough to come to the making of conclusions." Let us, then, wait till that time is at hand. *H. E. Durham.*

HARDY FRUIT GARDEN.

STRAWBERRIES FOR FORCING.

To have strong Strawberry plants suitable for forcing next winter and early spring, preparations should be begun so soon as the runners are large enough to layer; they should be obtained from plants grown especially for the purpose.

It is wise to plant a fresh bed of Strawberries each year, and the following season pinch out the flower trusses to encourage the plants to produce strong runners. This may not be possible in gardens where space is limited, but where plenty of ground is available, it is to be preferred, and the plants so treated will produce finer and more fruit their second season.

Select the strongest runners, and retain the first young plant on the runner, cutting the succeeding ones off and also all the weak ones. Procure a number of clean three-inch or four-inch pots, crock them carefully, and place some fibrous turf over the crocks to assist the drainage. Fill the pot to the rim with sifted loam mixed with leaf mould, and press the soil in the pot gently. Two rows may be layered at once by placing all the runners in between the rows, leaving every other row vacant to walk along for watering, etc. Have the pots ready filled to hand, place a single layer in each pot, and peg it down firmly with a wire or wooden peg. A small hole should be made in the ground with a trowel to allow each pot to be sunk about two-thirds of its depth, and the soil made tidy between them. This will

not only save them from being displaced, but the soil in the pots will be cooler, and this facilitates quicker rooting.

The runners should be well watered by means of a rose can so soon as the row is completed, and attention given to the plants every day if the weather is dry. The runners will need no attention beyond this until they are well rooted, when they should be severed from the parent plant, placed in a closed frame for a few days and slightly shaded to assist them to recover from the slight check.

Water them carefully, and spray them overhead during the evenings. In the meantime, the soil may be prepared for the final potting. Good fibrous turf from an old pasture, pulled to pieces by hand, should form the staple material, using about two-thirds of this to one-third of leaf-mould, enriched with old manure and a good sprinkling of coarse bone-meal. Six-inch pots are usually favoured for the forcing of Strawberries; they should be crocked carefully, and some grassy turf placed over the drainage. The soil should be mixed and turned a week or so before it is used, and should be in a nice, friable condition, so that it may be rammed firmly without becoming pasty.

Place the young plants with the crown just below the rim of the pot, and ram the soil firmly round it, so that when the work is finished the crown of the plant will just stand clear of the soil.

To produce good Strawberries in pots, it is essential that the crowns should be strong and well ripened; therefore, when potting is finished, place the plants on boards or ashes in the sunniest spot in the garden or frame ground, and give them every attention possible in the matter of watering and syringing.

Red spider is the commonest enemy of the Strawberry, and this should be kept in check. In the course of time the plants will throw out side shoots from the central crown; these should be kept picked off, and the surface soil stirred occasionally with a pointed stick. As the pots become full of roots, a little diluted liquid manure or soot water will be very beneficial, also a dusting of Strawberry fertiliser occasionally, especially during showery weather. When the plants have finished their growth they should be removed to cold frames, and plunged in leaves or ashes to prevent frost from cracking the pots. If frames are not available, they may be placed on their sides against a wall, and coal ashes arranged between them, building up each layer with ashes between them as high as is considered safe. This is an excellent method, as the plants remain moist and the batches may be taken inside as wanted. No set time can be laid down as to when forcing should be commenced, each cultivator being guided by the time he requires ripe berries. It is obvious that earliest batches take longer to produce ripe fruits than those which are housed later in the season. When preparing Strawberries for forcing, select as many plants as are required, choosing those with the strongest crowns. They should be taken to the potting shed and top-dressed with rich soil after gently removing some of the old soil on the surface.

The plants should be gently forced at first, the best place in which to grow them being a pit furnished with one row of pipes. If possible plunge the plants to their rims in leaf mould and litter. The gentle bottom heat from the fermenting of these materials will assist them greatly in making fresh growth. If the plants are attacked by red spider or any other insect, they should be dipped in or sprayed with an insecticide before housing them, and so soon as they are placed indoors they should be syringed overhead, especially if the weather is bright.

There is no better manure for Strawberries than diluted drainings from the farmyard, alternated with weak soot water, and these

stimulants should be given the roots when the plants are growing freely. An excellent place for them later is on a shelf in a vinery or Peach house that has just been started. The shelves should not be placed too near the roof glass, so that easy access can be had to them for watering. So soon as the berries show signs of changing colour the plants should be removed to a cooler house, and the use of manure water discontinued. Keep all runners picked off the plants and do not allow too many fruits to develop on each plant. The later batches will ripen a larger crop, but even then the smallest berries should be removed. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

VEGETABLE GARDEN.

WHITE-FLOWERED SAVOY.

THE courteous and interesting notes from Monsieur E. Meunissier on the above subject on page 440 (*Gard. Chron.*, June 20), are very informative and helpful, and I desire to convey to the writer my warmest thanks for them. At the same time they still leave the existence of a distinct, and fixed, variety of white-flowered Savoy, as mentioned by Dodonaeus (p. 402), an open question. It occurred to me that it might possibly be in existence in some district that I have not visited; if my surmise is correct I shall be grateful for the information.

The case mentioned by M. Meunissier, where about four square feet of plants with white flowers appeared in an area of twenty-five acres, interests me very much, and I shall be glad to learn if M. Meunissier detected any special feature or quality in the soil in those parts of the field where the plants appeared, or any other circumstance conducive to such an occurrence; and further, did the white-flowered plants produce seed of as good viable quality as the yellow-flowered plants, and was the produce of the seed of both types of the plant identical?

I have often seen white-flowered plants in Broccoli that have been standing for a long time in one spot, particularly the late varieties; perhaps some of your scientific correspondents can explain the cause of the variation. It would be of interest to others as well as myself. *S. B. Dicks.*

CAULIFLOWERS.

THE present weather cannot be termed suitable for this important crop. Drought, accompanied by extremes of temperature, has proved detrimental to the healthy development of the plants, but deeply worked, rich land will produce very good heads. The plants growing in comparatively poor soil will require more attention and must be regularly supplied with water.

When the plants are established well diluted liquid manure may be used as an aid in promoting healthy growth. Secure a mulch of fine surface soil throughout the beds by stirring the surface frequently. A mulch of partly-decayed manure should be applied if available. On an island garden we found sea-weed excellent for the purpose of mulching various crops, including Cauliflowers.

When the work of planting was undertaken during times of drought, fairly deep drills were drawn, and these were filled with water previous to setting out the plants. A further watering settled the soil about the roots.

A bed of rich, fine soil should be prepared in preparation for an autumn sowing of Cauliflowers. The seeds should be sown thinly and the seedlings transplanted before they become drawn, as sturdiness of growth will thus be ensured.

There are numerous fine varieties of this useful vegetable, including Early Giant, Autumn Giant, Early London White, Walcheren and Improved Snowball. *C. Ruse.*

SOCIETIES.

NATIONAL ROSE.

JULY 3 and 4.—Notwithstanding the brilliant sunshine and dry weather there was a glorious display of beautiful Roses at the great metropolitan show of the National Rose Society, held at the Royal Botanic Society's Gardens, Regent's Park, on the above dates. Competition was keen throughout the numerous classes, while in the nursery-

New Roses.

The tent in which new Roses were displayed was, as usual, the centre of attraction. No fewer than sixty-three new sorts were exhibited, and these were shown on cross tables instead of down one or two long tables, and this arrangement was a good one. There was always a long queue waiting for admission to this tent.

GOLD MEDALS.

Gwyneth Jones (Fig. 10).—This was the most strikingly attractive new Rose shown. It is a semi-



FIG 17—ROSE MRS. BEATTY.

men's group classes, the displays were superb. Altogether, the exhibition was a great success, indeed, it was one of the best held for several years past, and thanks to cooler conditions on the show days, the blooms lasted fairly well. Whether the experiment of a two-days' show will justify itself in the minds of the Council of the National Rose Society we cannot say, but as the conditions were unusually favourable on this occasion, it is possible a two-days' show may become the regular thing. We congratulate the officers and Council of the Society upon the success which attended their efforts: the display of lists of prize winners in the Secretary's tent was a useful innovation, and the attendance of nearly 35,000 people must have gladdened their hearts.

double Pernetiana variety, with glossy foliage. The large blooms are of rich vermillion colour and so brilliant that a bed of this variety in bloom would produce a most dazzling effect. Shown by Messrs. S. McGREDY AND SON, Portadown.

Dainty Bess.—A lovely and very attractive H.T. single-flowered variety and apparently of robust habit and free-flowering. The blooms are three-and-a-half inches to four inches wide, an exquisite shade of pink, and the daintiness of the variety is increased by marginal incisions which produce a fringed or frilled appearance. Shown by Mr. W. E. B. ARCHER, Monks Horton, Telbridge, Ashford.

Mrs. Beatty (Fig. 17).—In this slightly Tea-scented H.T. variety the blooms are large and full, quite up to exhibition form. The colour is

light creamy yellow. A good Rose, but we liked Richard E. West better, as it is of similar shape but of finer colour. Shown by Messrs. B. R. CANT AND SONS, Colchester.

Penelope.—A blush tinted, free and continuous-flowering hybrid Musk Rose. This has been exhibited on numerous occasions, and it is a fine garden variety. We imagine, however, that no one was more surprised than the raiser when he found a Gold Medal had been awarded it—an award well deserved and long overdue. *Penelope* was illustrated in the Supplementary Plate in *The Gardeners' Chronicle* of September 20, 1924. Raised and shown by Rev. J. H. PEMBERTON, Havering.

CERTIFICATES OF MERIT.

Dame Edith Helen.—This large, finely-shaped H.T. variety is of full exhibition size and fine in form; the colour is clear pink. This is a very handsome variety. Shown by Messrs. ALEX. DICKSON AND SONS, Newtownards.

I. Zingari.—A brilliant little Rose, apparently a profuse bloomer, and although the blooms are not of good form, they should be very effective in the garden as the colour is bright orange. Shown the Rev. J. H. PEMBERTON.

Kirsten Poulsen.—A single-flowered dwarf Polyantha variety, and very like *Else Poulsen* in its undulating petals, but it is a pure single. The colour is light scarlet with a pale rosy-white "eye" and deep golden anthers. Shown by Messrs. D. PRIOR AND SON.

Ivy May.—A small-flowered but a very free and pretty variety, charming in the bud stage; the colour is peach-pink. A useful H.T. garden Rose. Shown by Messrs. BECKWITH AND SON, Hoddesdon.

Scarlet Glory.—An uncommonly attractive H.T. Rose. The blooms are of medium size and pleasing form, broad but a trifle short in the petal. The colour is very rich, and although scarcely up to the shade generally understood as scarlet, we fail to find a better colour definition. Shown by Messrs. ALEX. DICKSON AND SON.

Mrs. Herbert Nash.—A big exhibition variety of rich rose-red colouring; very fragrant. Shown by Messrs. CHAPLIN, BROS., Waltham Cross.

OTHER NEW ROSES.

Among the many seedlings shown there were so many attractive varieties that we made brief notes of the following:—

Duchess of York.—A strikingly effective variety of the hybrid Austrian Briar class. The blooms are large, and though good they are not quite up to the best exhibition form, as in many of the open blooms the inner petals are crumpled. The broad outer petals are pink, lightly flushed with yellow, but all the inner petals are bright amber-yellow with some pink tinting. A handsome Rose; slightly fragrant. Shown by Mr. SANDY DICKSON, Dundonald, Co. Down.

Luna.—A lovely H.T. Rose with large, full, broad-petalled flowers of a light creamy shade, with a pale gold suffusion at the bases of the outer petals in the young blooms. The fragrance is very pronounced and suggestive of the old *Gloire de Dijon*. Shown by Messrs. W. PRIOR AND SON, Colchester.

Cecil.—A big, single Pernetiana variety, robust and free-flowering. The large, single flowers are light golden-yellow, and they are slightly fragrant.

Lady Wakefield.—A charming H.T. variety, very broad petalled and fairly full. Fawn-pink is the best colour description we can think of. It appears to be very free-flowering and of robust growth. These two were shown by Messrs. B. R. CANT AND SONS.

Bedford Crimson.—A useful variety of bright, deep crimson colouring. It is very free and

charming in the bud state. Shown by Messrs. LAXTON BROS.

Lady Elen Maglona.—The lovely form of this variety is very attractive, and its colouring—bright rose-pink, with lighter edges to the inner petals—is no less effective. A very beautiful Rose.

Richard E. West.—A glorious H.T. Rose, with large, broad-petalled blooms of *Maréchal Niel* form and size, and of soft, yellow colouring—not so deep, as in *Maréchal Niel*—a fine Rose; Tea-scented.

Lady Worthington Evans.—This is a broad, flattish H.T. variety, with broad, velvety, bright-crimson petals. Apparently a strong grower.

Francis Simms.—In this H.T. variety the creamy basal colour is suffused with mauve-pink; a flower of good size and form.

Lady Margaret Stewart.—A yellow Rose, with faint pink tinting on the broad, outer petals, and a deeper yellow glow of veinings at the bases of the petals. Of good form, but looks as if it bruises badly.

Geo. H. Mackereth.—A deep, red Rose of capital form, but, alas! the colour seems to fade to magenta rather quickly.

The foregoing six varieties were shown by Messrs. ALEX. DICKSON AND SONS, Newtownards.

Mrs. Talbot O'Farrell.—A shapely, medium-sized Rose that carries its blooms on long, stout stems. The outer petals are deep pink, with pale, orange-yellow shading, this latter colour in a dull form covering the inner petals.

Doris Trayler.—A sprightly Rose with light, orange-coloured shading and veining on a cream ground. The flowers are of medium size and excellent form.

Eva Eakins.—Flowers of poor form as shown, but of nice orange vermillion colour.

White Ensign.—A white H.T. Rose of medium size and poor form.

Lady Strange.—This bold H.T. variety is of delightful shape and good exhibition form. The colour is pink with a peach shading.

The foregoing five varieties were shown by Messrs. S. MCGREDY AND SON, Portadown.

Vivid.—A bright cherry-red H.T. variety of medium size, very attractive while young, but alas, fades to magenta on the outer petals. Shown by Messrs. FRANK CANT AND CO.

John Russell.—An attractive crimson variety, rather flat in form but evidently a good bedding Rose. Shown by Messrs. DOBBIE AND CO.

J. N. Hart.—A large and bold H.T. variety of deep pink colouring, but suggestive of some other varieties. Shown by Messrs. CHAPLIN BROS.

Nora Henslow.—An attractive scarlet single H.T. variety, with broad, smooth petals. Raised by an amateur—Mr. F. EVANS, Shaftesbury Road, Reading.

Cestrian.—This is a big and shapely Rose of fine exhibition form and size, the petals all recurving a little at the margins. The colour is warm pink. Shown by Messrs. BEES, LTD., who also exhibited *Joan Howarth*, and *Firefly* in fine condition.

Groups of Roses.

From the general visitors point of view the groups of cut Roses are the most attractive feature of the show and, indeed, the generous masses of lovely Roses were particularly attractive. The new arrangement of allotting separate tables to each exhibitor, which was so successful last year, was continued and developed with conspicuous success, and the demand for these spaces was so great in the three classes that the exhibits "overflowed" into a secondary tent. The whole arrangement tended to a comfortable inspection of the groups and must have been such a source of satisfaction to all concerned that we imagine the Council of the Society will, in

the quaint phraseology of the Old Court Leet, "present that the custom is good and laudable and should continue."

There were no fewer than eight large groups and each was worthy of a good prize, but in such cases everyone cannot win honours. The Championship Trophy was awarded to Mr. ELISHA J. HICKS for an imposing arrangement of splendid blooms. At the four corners of the table there were pillars of *Ophelia*, *Joanna Bridge*, *Mrs. Hy. Stevens*, and *Climbing Golden Ophelia*, while in the middle there were pillars of such free-flowering Roses as *Ethel* and *Joseph Liger*. The many lower stands and vases contained a wealth of bloom; the outstanding varieties being *Chas. E. Shea*, *Betty Upprichard*, *Los Angeles*, *Mabel Morse*, and *Clovelly*.

Excellent arranged baskets of lovely Roses were the dominant feature of the second prize groups of Messrs. ALEX. DICKSON AND SONS, and these were filled with *Gwynne Carr*, *Mrs. Henry Morse*, *Betty Upprichard*, *Mrs. Wemyss Quin*, *Golden Emblem*, *Shot Silk*, and other valuable sorts.

The style of arrangement of the third prize group was also very successful, and Messrs. CHAPLIN BROS. had a fascinating centre of linked pillars and good sorts, baskets of *Mabel Morse*, *Lady Inchiquin*, *Lady Roundway* and other varieties and an excellent edging of dwarf Polyantha Roses.

The competition was easier in the medium-sized group-class for there were only four competitors. The first prize was awarded to Messrs. A. J. AND C. ALLEN for a table of splendid blooms of *Ruth*, *Hortulanus Budde*, *Mabel Morse*, *Golden Emblem*, *Betty Upprichard*, *Sovereign*, and similar varieties. A very graceful arrangement won the second prize for Messrs. HENRY MORSE AND SONS who included *Vesuvius*, *Betty Upprichard*, *Mrs. Henry Morse*, *Etoile d'Holland*, and *Mabel Morse* in splendid condition. Mr. WALTER EASLEA, who had an uncommonly effective style of arrangement, was third.

Eight growers filled tables measuring six square feet and most of them had exceedingly attractive displays, and the first prize table of Mr. J. MATTOCK was especially pleasing. The corner vases of *Margaret Dickson Hamill*, *Lady Inchiquin*, *Betty Upprichard*, and Rev. F. Page Roberts were a happy inspiration. *Mrs. Henry Morse*, *Souvenir de Claudius Pernet*, and *Lady Curzon* were excellent varieties in the attractive second prize table of Messrs. JARMAN AND CO. Equal third prize was awarded to Messrs. J. JEFFRIES AND SON and Mr. F. J. EDWARDS.

ROSES IN VASES AND BASKETS.

Competition was also very keen in the classes for decorative Roses. The best thirty-six vases were set up by Messrs. A. WARNER AND SON, who included excellent vases of *The Queen Alexandra Rose*, *Golden Emblem*, *Red Cross*, and *Mrs. H. Stevens*. Messrs. F. CANT AND CO., in their second prize collection, showed beautiful blooms of *Padre*, *Mrs. F. J. English*, *Archie Gray*, and *Maud Cuming*. Mr. J. MATTOCK was third.

The first prize for eighteen varieties was won by Mr. GEORGE PRINCE with an almost perfect exhibit, in which *Shot Silk*, *Souvenir de C. Pernet*, *Betty Upprichard*, and *Mrs. Henry Stevens* were admirable. Mr. F. SPOONER was a good second, and his outstanding varieties were *Isobel*, *Innocence*, *K. of K.*, and *Paul's Scarlet Climber*. Mr. G. LILLEY was third.

All the exhibits of twelve vases of dwarf Polyantha Roses were particularly good, and Messrs. C. PRIOR AND SON, who were first had an excellent exhibit of such sorts as *Redhatte*, *Mrs. W. H. Cutbush*, *Alice Poulsen* and *Ellen Poulsen*. In the second prize set of Mr. F. SPOONER, *Eblouissant*, *Ellen Poulsen*, and *Mrs. W. H. Cutbush* were particularly good. Messrs. G. JACKMAN AND SON were third.

As always at the summer show, the baskets of Roses were splendid. The best

seven were shown by Mr. J. MATTOCK, who included Mable Morse, Louise Crette, Los Angeles, Golden Emblem, and Lady Inchiquin of superlative beauty. Messrs. CHAPLIN BROS. were second, and their baskets of Mabel Morse and Mrs. Tresham Gilbey, for example, were very lovely.

Mr. GEORGE PRINCE won chief honours in the class for three baskets of decorative Roses, showing excellent examples of Lord Charlemont, Margaret Dickson Hamill, and Mrs. Hy. Morse. Mr. HENRY DREW, the second prize-winner, showed Betty Upchurch, Los Angeles, and Mrs. Hy. Morse.

The best basket of any one exhibition H.P. variety was of Frau Karl Druschki, shown by Messrs. D. PRIOR AND SON, and Messrs. J. CRANFIELD AND SON were second with Gloire de Chédane-Guinoisseau. Showing Mrs. Hy. Bowles, Mr. GEORGE PRINCE was similarly first with any H.T. variety, and Messrs. CHAPLIN BROS. were second with the same sort. The best basket of any T. Rose was Madame Jules Graveraux, shown by Mr. C. GREGORY, and Mr. J. MATTOCK was second with the same variety. In the class for one basket of any H.P., H.T., or T. variety put into commerce since January 1, 1919, Messrs. CHAPLIN BROS. were first with Mrs. C. Lamplough; Messrs. A. WARNER AND SON were second with Mabel Morse, and Mr. G. PRINCE was third with Capt. Kilbee Stuart.

Exhibition Roses.

The Champion Trophy, which is annually offered for the best seventy-two distinct blooms brought together many surprising collections. The honour this year was won by Messrs. F. CANT AND CO., with a well-balanced collection of very fine blooms. The very best were Courage, a rich crimson of perfect shape; Dean Hole, Col. Oswald Fitzgerald, Mildred Grant, Admiration, J. L. Mock, Clara Curtis, Edith Cavell, Archie Gray, and Medea. Messrs. B. R. CANT AND SONS, who were second, included excellent blooms of Mabel Morse, Mabel Turner, The Queen Alexandra Rose, Lady Inchiquin, Manifesto, Nellie Parker, and Rev. F. Page Roberts. In the third prize collection of Messrs. D. PRIOR AND SON there were fine blooms of Cleveland, Mrs. Murray Allison, C. K. Douglas, and Rev. F. Page Roberts.

In the even more trying class for three blooms each of thirty-two varieties, the order of the first two prizes was reversed and Messrs. B. R. CANT AND SONS were first; their magnificent collection included A. Hartman, Edith Cavell, Horace Vernet, Rev. F. Page Roberts, and Capt. Kilbee Stuart, while Ethel Dickson, Alex. Ernslee, Mrs. Hy. Morse, Mrs. G. Marriott, and J. L. Mock were the very best trios shown by Messrs. F. CANT AND CO.

The China trophy, offered for forty-eight distinct blooms, was won by Mr. C. Gregory, with a splendid collection which included Mrs. Hy. Bowles, H. V. Machin, Mabel Morse, J. B. Clark, Earl Haig, and Madame Jules Graveraux. Messrs. JARMAN AND CO. were a close second, and they included Mrs. Sam Ross, Premier, Joseph Welch, Freda, and Mrs. G. Marriott. Mr. GEORGE PRINCE was third.

In the class for twenty-four distinct blooms, the first prize was won by Mr. H. DREW, whose colour disposal was particularly good, as also was the quality of his blooms. The best included Coronation, Edith Cavell, Mrs. Elisha Hicks, Mabel Drew, and Mrs. H. R. Darlington. In the second prize collection Mr. E. J. HICKS showed Maman Cochet, Constance Soubert, Mabel Morse, and Souvenir de Claudius Pernet.

Mrs. G. Marriott, a Premier bloom, was found on the first prize board of trios of eight varieties shown by Mr. GEORGE PRINCE. Other splendid sorts were H. V. Machin, Ethel, and Mrs. C. Hall. Messrs. JARMAN AND CO. were second, and they included Mrs. Elisha Hicks, Mrs. G. Marriott, and Joseph Welch.

The Tea and Noisette blooms were particularly fresh and good—decidedly larger than might have been expected. The best eighteen were staged by Messrs. G. LONGLEY AND SONS, who showed The Bride, Molly Sharman Crawford, Madame Jules Graveraux, and W. R. Smith. Mr. GEORGE PRINCE had, in his second prize collection, Maréchal Niel, Mrs. H. Taylor, Mrs. Foley Hobbs, and Madame Jules Graveraux of great merit.

Contrary to the general rule, the exhibits of "New Roses" were of merit. The best twelve, distinct, shown by Mr. J. MATTOCK, included really good blooms of Lord Charlemont, Marcia Stanhope, and Mabel Morse, while in the second prize collection Lady Inchiquin, J. G. Glassford, and W. Korde were of decided merit.

Messrs. D. PRIOR AND SON, showing Capt. Kilbee Stuart, were first with twelve blooms of any Rose distributed since January 1, 1921. Mrs. J. MATTOCK was second with Marcia Stanhope, and Mr. GEORGE PRINCE was third with Lady Inchiquin.

Amateurs' Classes.

Although in a few classes the entries were not quite so numerous as in some former years, generally the competition was good and many of the blooms reached a commendable standard of excellence. The Champion Trophy for exhibition Roses was won by Dr. R. C. TURNBULL, Colchester, with an even set of good varieties, which included Candeur Lyonnaise, Red Star, Coronation, Mabel Morse, E. F. Hudson, Lord Allenby and Florence Forrester. The second prize boards of J. N. HART, Esq., Potter's Bar, included Capt. Kilbee Stuart, Candeur Lyonnaise, Gladys Harkness and Coronation. F. DENNISON, Esq., Leamington Spa, was third.

The first prize exhibit of twenty-four varieties shown by Mr. Fieldgate, Colchester, was awarded the Edward Mawley Challenge Cup. Candeur Lyonnaise, Hugh Dickson, Mrs. John Laing, Mrs. F. Dennison and A. Hartmann are a selection of his splendid varieties. Dr. TURNBULL in his second prize set showed Modesty, Mrs. R. D. McClure, Mabel Morse and J. G. Glassford. Mr. F. DENNISON was third in this strong class. Of excellent quality were the two baskets of cut Roses, where J. E. RAYER, Esq., Worcester, was first with M. V. Machin and Mrs. G. Marriott and Dr. TURNBULL was second with T. F. Crozier and Mrs. G. Marriott. The twelve distinct blooms were also of high quality and here C. H. Rigg, Esq., St. Albans, was first with splendid blooms of Edgar Burnet, J. L. Mock, J. B. Clarke, and J. G. Glassford. A. JOHNSON, Esq., Bishops Stortford, was a very close second and he included excellent blooms of Modesty, Colleen and Coronation. Candeur Lyonnaise shown by S. W. BURGESS, Esq., Tonbridge, was the best single variety in a basket and Mrs. Henry Bowles, shown by Mrs. H. BALFOUR, Oxford, was second.

In the class for growers of fewer than five hundred plants the best twelve distinct varieties were excellent examples of such sorts as Dr. A. Petyt, a vivid crimson, Mr. C. Lamplough, Martha Drew, and Candeur Lyonnaise, shown by R. DE V. PRYOR, Esq., Hitchin, whose excellent exhibit was also awarded the Edward Mawley Memorial Medal as being the most meritorious in the Amateurs' Classes. W. G. BAMBRIDGE, Esq., Kettering, was second in this very strong class; he showed Edel, Mrs. J. H. Welch, and A. Hartmann. The best six blooms in this division were shown by G. O. NICHOLSON, Esq., Market Harborough, and he had fine examples of Coronation and J. L. Mock.

R. A. SMITH, Esq., Hertford, had the best basket of Roses.

In the division for growers of fewer than two-hundred-and-fifty plants the best six blooms were shown by Dr. PANCKRIDGE whose collection was of great merit. E. T. GANN, Esq., Whitstable, had the best basket. The extra class brought twelve fine blooms from J. E. RAYER, Esq., and in the class

for amateurs who have never won a prize at a National Rose Society show, the first prize was won by J. C. HODGKINS, Esq., Walsall, who showed good blooms of Lady Plymouth and Lemon Pillar. E. W. TURNER, Esq., Herne Bay, was a good second.

The Williamson Challenge Cup was offered for six blooms of distinct varieties grown within ten miles of Charing Cross. It was won by A. N. ROGERS, Esq., East Putney, with very creditable blooms of Mrs. Elisha Hicks, J. G. Glassford, Mrs. Henry Bowles, Mrs. G. Norwood, Molly Bligh, and Florence Forrester; second, J. ROFF, Esq., Wood Green. For six blooms of distinct varieties there were three entries, and J. T. OWEN, Esq., 383, Alexandra Park Road, N., excelled, followed by Mr. F. SPENCER, Harrow.

Only two competed in the class for six blooms open to growers of fewer than two-hundred plants without assistance. The better exhibit was shown by A. N. ROGERS, Esq., who had a grand bloom of Mrs. Foley Hobbs variety.

Four competed in the class for six blooms in not fewer than four varieties. The first prize exhibit, shown by J. T. OWEN, Esq., was very commendable, and included good blooms of Coronation and Mrs. H. Bowles; second, Mr. ROFF, Wood Green.

A challenge cup was offered by the Gardeners' Company for six blooms, distinct, grown within five miles of Charing Cross. Mr. ROGERS was the only competitor, but he was worthy of the first prize award. His blooms of Florence Forrester, Mrs. Geo. Norwood, Madame Louise Crette, and J. G. Glassford were splendid representatives of these fine Roses.

The Nicholson Challenge Cup, offered for twenty-four blooms, distinct, attracted only two competitors, which is to be regretted, for the two exhibits were of the highest standard indeed. W. G. BAMBRIDGE, Esq., Kettering, staged blooms that would have been hard to excel, even by professional growers. His more notable varieties were Frau Karl Druschki, Geo. Dickson, Mrs. H. Morse, Candeur Lyonnaise, Glory of Steinforth, Mrs. C. Lamplough, and Souvenir de Claudius Pernet. W. E. MOORE, Esq., Ickenham, followed closely, and his blooms were in the finest possible condition late in the second day, although Mr. BAMBRIDGE beat him for size of flower.

The Elisha J. Hicks Challenge Cup for twelve blooms, distinct, was won by W. SUNDERLAND, Esq., Driffield. This was a well-contested class, in which six competed.

Mr. Hammond offered a piece of plate for the best nine blooms, distinct, and the winner was Dr. W. P. PANCKRIDGE, with extraordinarily fine blooms; second, Mr. REEVES, Gosport.

Dr. PANCKRIDGE also excelled in the class for six blooms, distinct; and here again he far-outdistanced his ten rivals in this well-contested class.

No fewer than twelve competed in the class for six blooms, in not fewer than four varieties. A. D. BRINE, Esq., Hythe, was placed first; A. H. FOWLER, Esq., Newbury second, and H. C. Cook, Esq., Bromley, third.

The Tea and Noisette Roses shown by amateurs were very fine. A superb exhibit, shown by Mr. MOORE, Ickenham, was awarded the first prize, and it also received the Price Memorial Prize, and White Maman Cochet was adjudged the best Tea or Noisette variety shown by an amateur, and received the Society's Silver-gilt Medal. The other varieties were Maman Cochet, Mme. Jules Graveraux, and Mrs. Ed. Mawley; second, Dr. PANCKRIDGE.

Dr. M. LACROZE, Roehampton, was the only exhibitor in the class for an arrangement of Roses on a space five feet by three feet, for which the Dixon Davies Cup was offered, and he received the trophy for a pleasing exhibit.

Better competition resulted in the class for an exhibit of Roses on a space three feet by three feet, in which T. W. BURGESS, Esq.,

Tonbridge, was placed first, and H. CLAYDON, Esq. Bishops Stortford, second.

Of the other classes in the Amateurs' section, the Mattock Cup for twelve distinct varieties was won by H. R. DARLINGTON, Esq. Potters Bar; The Holroyd Cup for six distinct varieties by F. SLAUGHTER, Esq. Steyning, and the first prize for six distinct varieties on a space three feet by three feet, by Mrs. L. A. TILLEY, Northwood.

Decorative Classes.

These were accommodated in a large marquee that gave ample space for viewing the exhibits in comfort, and the latter were sufficiently numerous to make a very pleasing feature of the show.

The chief of the exhibits were the dinner tables decorated with Roses; the total number of these in four classes was twenty-nine. Nothing strikingly original was attempted by any exhibitor, and the prizes went to the usual central bowl with corner pieces, and, in some cases, other smaller vases and bowls.

The variety mostly favoured was Ophelia or its darker coloured type Mme. Butterfly. But the great value of the darker coloured Roses for this purpose was seen in one or two cases, notably where Betty Uprichard was used; one or two also favoured the delicate, buff-yellow Roselandia.

The largest competition was in the Amateurs' class from which single Roses were excluded. The exhibits numbered eight and they were all of merit; no fewer than five prizes were awarded and one exhibit was highly commended.

Mrs. COURTNEY PAGE, the winner in this class for many years, again excelled. She had a generous centre bowl of superb blooms of the variety Mme. Butterfly, an improvement on the older Ophelia, which was so prominent in these exhibits a few years ago. The blooms were relieved with sprays of Rosa pteracantha and R. Willmottiae. Six smaller receptacles were included, and one of these was arranged at either corner; second, Mrs. F. CHARLTON, Yiewsley, also with Mme. Butterfly, not much inferior to the first prize exhibit, but not quite so good in the large centre bowl and the foliage not so pleasing; third, Mrs. F. OAKLEY FISHER, Tudbury, with Roselandia; fourth, Mrs. A. D. RUFF, Sharnbrook, with Sunburst; fifth, Mrs. H. BARTON, Wakes Colne, with Emma Wright.

Single Roses, which at one time swept the boards in these classes for decorated tables of Roses, have now a class restricted to themselves. The seven exhibits were all very dainty. Irish Elegance and Irish Fireflame were much favoured by the competitors but the premier award went to a rather crowded table of Mrs. Oakley Fisher, relieved with foliage of Rose Achievement, Rosa Willmottiae and R. pteracantha, arranged by Mrs. L. COLSTON, Hale, Warminster. Second, Mrs. OAKLEY FISHER, Sudbury, who had a dainty decoration of Irish Fireflame, a Rose with a little more orange than in the exhibitor's namesake. Third, Mrs. COURTNEY PAGE, who had Irish Elegance and the dainty Rosa Willmottiae foliage; it was very pretty but the use of ten receptacles, some tiny glass boats, left little space for the other necessities of a dinner table.

A piece of plate was offered as the first prize in a class for a decorated dinner table in which floral decorations only were permitted. The seven competitors were all worthy and the judges made the premier award in favour of Mrs. OAKLEY FISHER, who had a glorious decoration of Ophelia, most superb specimens of this popular Rose. The corner pieces of small cut-glass bowls were very deftly arranged. Second, Mrs. H. BARTON, with the gloriously coloured Betty Uprichard, a variety that evoked admiration from all visitors. Third, Miss E. GRIFFITH, with Ophelia.

Mrs. L. R. MAY, Waltham Cross, excelled

in the class for a decoration of cut Roses arranged with Rose foliage only, open to all exhibitors. This fine exhibit appealed by reason of its rich colour effect and the flowers were of the highest quality. The deep rich pink showed to advantage against the white cloth, and the inclusion of sprays of dark foliage served to throw the blooms into greater relief; second, Mrs. A. R. BIDE, Farnham, with Betty Uprichard. This also is a Rose of glorious tinting, of charming form, especially in the bud stage, and fragrant. The outer surface of the petals is deep cerise-red and the inner pink with a suffusion of orange at the base. Third, Mrs. C. A. TISDALL, Woodford Green, with Roselandia.

There were nine entries in the class for a bowl of Roses of mixed varieties. The general inclination of all was to crowd too many blooms in the bowl and the quality of the flowers seems to have been the deciding factor. The first prize was awarded to Mrs. H. BARTON, whose exhibit was of varied colours; the second to Mrs. COURTNEY PAGE, with good blooms but massed more like a column of Roses than the bowl of Roses we are accustomed to see in dwelling rooms; third, Mrs. OAKLEY FISHER.

The baskets of cut Roses lightly arranged with Rose foliage and small buds constituted one of the best features in the decorative classes. The Society provides the baskets so that all the competitors have the same opportunity. The baskets were furnished with handles and in nearly all cases these were made use of to bring the flowers up above the basket proper. The premier award was made to a basket of Mme. Butterfly Roses of the highest quality, arranged by Mrs. GRIFFITHS, but we preferred the basket of red Roses shown by Mrs. F. CHARLTON, who was awarded the second prize. The variety was not labelled but it was apparently Richmond, which is one of the most popular of all red Roses with professional florists.

The third prize was awarded to Miss J. B. LANGTON, Hendon, who employed a single Polyantha variety of the American Pillar, type, but her basket suffered by the inclusion of too much material.

The best vase of Roses was shown by Miss M. E. WEST, Reigate, who had an outstanding win, her vase containing superb blooms of Mme. Butterfly; second, Mrs. COURTNEY PAGE with the same variety; third, Mrs. A. D. RUFF, who also employed this very popular Rose.

Mrs. A. K. LOCK, Denmark Park, had the premier exhibit of a bowl of Roses open to a lady amateur who has never won a first prize in these classes, and this lady also used Mme. Butterfly, which Rose was also used by Mrs. BIDE in her first prize exhibit in the open decorative classes for a basket of Roses; second, Mrs. C. A. TISDALL, Woodford Green, with Richmond.

This lady was first for a bowl of Roses in the open classes.

Miscellaneous Exhibits.

In the corridor there were the usual exhibits of miscellaneous flowers. Messrs. IRELAND and HITCHCOCK and Messrs. DOBBIE and Co. had excellent Sweet Peas. Messrs. BLACKMORE and LANGDON and Messrs. R. H. BATH, LTD., showed Delphiniums. Messrs. STUART, SON and Co., Mr. C. ENGELMANN and Messrs. ALLWOOD BROS. staged Carnations.

Messrs. G. BUNYARD and Co. and Messrs. MAXWELL and BEALE showed hardy border flowers. THE CENTRAL GARDENS, LTD., had a rock garden; Messrs. I. HOUSE and SON displayed Scabious; Messrs. J. CHEAL and SONS exhibited Dahlias, and Messrs. REAMS-BOTTOM and Co. showed Anemones.

In the grounds excellent greenhouses and frames were displayed by Messrs. DAVID SWAIN and Co. and Messrs. C. HAYWARD and Co. A tent was devoted to the J.P. Super Lawn Mower and Fison's Manures were shown in various forms.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE eightieth anniversary festival dinner of the Gardeners' Royal Benevolent Institution was held at the Grocers' Hall, Princes Street, City, on the 2nd inst.

The Rt. Hon. Austen Chamberlain, M.P., presided and the company, which numbered nearly two hundred, included the Rt. Hon. Sir Jas. Agg-Gardner, Sir George and Lady Sutton, Mr. R. Cory, Mr. Edward White, Mr. and Mrs. W. L. Bradbury, Mr. Leonard Sutton, Sir Jeremiah and Lady Colman, Col. Sir John Smith Young, Sir Edward Stern, Bt., the Rev. Staunton Batty, Col. W. Churchill Hale, Mr. Noel Sutton, Lt.-Col. Francis W. Heath, Mr. James Hudson, Mr. A. Dimmock, Mr. and Mrs. D. Ingamells, Mr. and Mrs. J. F. McLeod, Mr. S. M. Segar, Mr. and Mrs. Geo. H. Barr, Mr. H. B. May, Mr. and Mrs. Alex. J. Monro, Mr. and Mrs. G. H. Cobley, Mr. and Mrs. A. Watkins, Mr. and Mrs. George Monro, Mr. and Mrs. J. M. Bridgeford, Mr. A. J. Wood, Mr. P. C. M. Veitch, Mr. W. H. Outbush, Mr. W. Poupert, Mr. and Mrs. G. Barr, Mr. C. H. Curtis and Mr. and Mrs. J. Collingridge.

The Grocers' Hall is one of the most beautiful buildings in the city of London and the fine banqueting room, decorated with flowers (contributed by a number of friends of the Institution) by Mr. H. Miles, presented a magnificent spectacle. The proceedings were marked by great harmony to which a delightful programme of music, under the direction of Mr. Ralph Norris, largely contributed.

The principal toast of the evening—that of the Gardeners' Royal Benevolent Institution—was proposed by Mr. Austen Chamberlain, who stated that they were reversing the old proverb which stated business first and pleasure afterwards, for in the dinner they had had their pleasure and the needs of the Institution was now the business to attend to. After describing the aims and objects of the Institution and stating that at the present time the number receiving annuities was two hundred and fifty, and that to maintain the working of the charity £5,500 a year was necessary, he proceeded to give some interesting remarks on his association with gardening. He stated that while politics was his profession and his work, gardening was his delight and the source of the most pronounced pleasure. This love of flowers he had inherited from his father and mother and among the recollections of his childhood was going on a Sunday with his father to pick Carnations in their garden in order to carry them in triumph to his grandfather and defy him to equal them. He stated that he knew of nothing that would make Monday, Tuesday, Wednesday, Thursday and Friday tolerable for him save that he could look forward to Saturday to be in his garden. Mr. Chamberlain said that the first time he attended the League of Nations he reserved two days to carry out two desires of his heart, one that was not relevant to the subject under discussion, the other to visit the garden of M. Correvo at Floraire. Then, in his youthful days, a pursuit which was more attractive to him then than now and one which besets gardeners after dinner, was that of taking a lantern and going out in the garden to "catch that beastly slug." He well remembered that his father would lay down the book he was reading and say "I know that slug is at that Odontoglossum Alexandre spike; come along Austen and we will get him." "I, too," said Mr. Chamberlain, "have a feeling that some slug is at my favourite flower and I must go out and do him to death."

Mr. Chamberlain gave a little inner knowledge of political happenings by describing how the Temperate House at Kew was completed. He stated that his father, Mr. Joseph Chamberlain, was asked by Sir William Harcourt on a certain occasion to "pair" with him. His father had first declined because he had a

speech to make on that occasion, but Sir William pleaded that he had to be present at a Civil Service dinner, and that if Mr. Chamberlain spoke, he, Sir William, would have to be present to reply. Mr. Chamberlain therefore agreed that he would "pair" on the understanding that Sir William, who was Chancellor of the Exchequer, provided the money for the completion of the Temperate House at Kew. To that Sir William consented. But when the estimates for next year came up no provision had been made, and his father received an angry letter from Sir William Thiselton-Dyer. His father saw Sir William Harcourt and said he had deceived him, but the latter gentleman declared that the Treasury had made provision. On further investigation at the Treasury it was found that the grant had been struck out by Sir William himself! The matter was, however, rectified and the Temperate House completed. Mr. Austen Chamberlain said he could be perfectly happy with a garden, not too big and he would want nothing more than a little flower garden to cultivate with his own hand and some books, and to do some journalist writing, which he adroitly pronounced was now no longer to be countenanced by politicians in office. He stated that he saw others playing cricket and others playing golf and he was sorry for them; for these pursuits and the ordinary pursuits of the average Englishman he had something of an hereditary distaste; his recreation was gardening, and so long as he could he would garden himself, and when he could not, he hoped to enjoy the gardens of others. He commended to those present and to others of the gentle art of gardening—the cause of the Gardeners' Royal Benevolent Institution, and he coupled with it the name of Mr. Leonard Sutton, who, he said, was known beyond the limits of his own country for the services he had rendered to gardens and gardeners.

Mr. Leonard Sutton, in reply, begged for the sympathy of his hearers in having to follow such an eloquent speaker, and also in having to reply to a toast which was always so ably responded to by the late Sir Harry J. Veitch. He stated that he had received letters of regret from several who were unable to be present, including Lord Lambourne, whom he was sorry to say had a severe attack of bronchitis. He stated that it augured well for the Gardeners' Royal Benevolent Institution that it had in two successive chairmen of the festival dinners such noted personages as the heir-apparent to the throne and His Majesty's Secretary of State for Foreign Affairs. He stated that the Institution existed on behalf of professional gardeners, who devoted their lives both night and day to give us the beautiful flowers we so much value, and who, through no fault of their own, find themselves in later days in penury and distress. The small sum allotted to those on the charity made all the difference between them living in their little cottages or in the workhouse, and he proceeded to read several letters of gratitude from beneficiaries. He urged those who could do so to assist in forming local associations, such as those at Worcester and Reading, and another way in which the Institution could be helped was to open beautiful gardens for inspection by the public at a small charge, on behalf of the Institution.

Other toasts included "The Visitors," proposed by Sir Jeremiah Colman, Bt., who said that his first responsibility was to extend their thanks to the Master and Court of the Grocers' Company for lending their beautiful hall that night for the purpose of the dinner. For some seven hundred years the Grocers had dispensed hospitality in that beautiful hall and he asked the Master to convey to his Court their gratitude.

Responses were made to this toast by the Rt. Hon. Sir James Agg-Gardner and Col. W. Churchill Hale, Master of the Grocers' Company, who referred with pride to the small garden now attached to the Grocers' Hall and stated that in 1428 their

garden extended to Walbrook and even thirty-five years ago it was still an extensive garden; although, necessarily very limited now, they had done their best to make it a pretty feature of the city.

At this stage of the proceedings the secretary, Mr. George J. Ingram, stated that the subscription list amounted to nearly £3,000, which included the Chairman's personal contribution and, amongst others, the following donations: Viscount Bearsted, £105; Messrs. de Rothschild's, £105; Messrs. Sutton and Sons, £100; Messrs. Hurst and Son, £100; Major E. G. Monro's list amounting to £725, including £10 10s. each from Mrs. M. A. Monro, Messrs. Geo. Monro, Ltd., Messrs. T. J. Poupart, Ltd., Mr. Alfred Watkins, Mr. J. P. Rochford, Mr. A. Stevens, Mr. E. Stevens, Mr. H. Larsen, and Mr. M. Larsen, and £5 5s. from Mrs. Watkins; Major E. G. Monro, Mr. George Monro and Mr. B. J. Monro, £500 for a special fund in memory of their father, the late Mr. George Monro, V.M.H., who was for forty-five years a member of the Committee; Mr. J. Collingridge's list, £150, including £10 10s. each from Mr. Collingridge, Mr. D. Ingamells, Mr. H. F. Hannibal, Mr. H. Miles, Mr. W. Maxwell, Messrs. Parsons and Co., and Messrs. Elders and Fyffe; Mr. A. J. Woods list £102, including Mr. J. L. Kinnell, £10 10s.; Messrs. W. Cutbush and Son, £5 5s. and Mr. A. Howard, £5 5s.; Royal Horticultural Society, £52 10s.; Mr. R. Cory, £52 10s.; Messrs. Waterer, Sons and Crisp, £52 10s. including £12 12s. from Mr. Bernard Crisp; Mr. Edward White, £50; Mr. C. H. Cook, £33; Mr. H. G. Alexander, £26 5s.; £25 each from Sir Jeremiah Colman, Bt., Major Churcher, Mr. W. L. Cory, Mr. W. E. Wallace, and the Worshipful Company of Grocers; £25 from Mr. C. H. Curtis, including 5 guineas from the proprietors of *The Gardeners' Chronicle* and 10 guineas from Mr. W. L. Bradbury, Mr. P. C. M. Veitch, £23; £21 each from Messrs. Bunyard and Co. and Mr. W. Honess; the Countess Bathurst, £20; Mr. J. B. Slade, £18 18s.; Mr. S. J. Martin, £18 18s.; Mr. F. J. Chittenden, £15 15s.; Mr. P. Ladds, £15 15s.; Mr. W. O. Hieble, £13 13s.; Mr. T. Finch, £11 11s.; £10 10s. each from Lord Treowen, Mr. A. Harris, Mr. E. Harriss, Messrs. Barr and Sons, Mr. E. F. Haselton, Mr. G. H. Fisher, Mr. E. Manwaring, Mr. R. J. Sainsbury, Mr. Noel Sutton, Mr. C. E. Woodhouse, Mr. David T. Smith, and Mr. F. C. Stoop; Mr. Arthur Dye, £9 9s.; Mr. W. Robins, £8 8s.; Mr. F. Streeter, £8 8s.; £7 7s. each from Mr. J. F. McLeod, Mr. Hubert Greenwood, and Mr. G. Sparrow; Mr. Geo. Copley, £6 6s.; Mr. J. T. Daniels, £6 6s.; and £5 5s. each from Sir John Smith Young, Messrs. A. Dawkins, S. M. Segar, Bruce Gibson, W. Howard, J. B. Linfood, J. Cull, W. Cull, A. Dimmock, J. Trevor, H. B. May, A. H. Maxwell, and Flageolet, Skene and Co.

READING AND DISTRICT GARDENERS'

By the kind permission of Messrs. Sutton and Sons over one hundred and fifty members of this Association and their lady friends spent a very pleasant evening in the firm's trial grounds, London Road, Reading, on Saturday, June 27. The Sweet Peas grown for exhibition purposes and under trial were given special notice, and the batches of annuals, notwithstanding the very unfavourable season, were making a gay show and claimed many admirers. Prominent kinds were Clarkias, Larkspurs, Delphiniums, Linarias, Linums, and Stocks, whilst a very large breadth of Pink Canterbury Bells was a glorious sight. In the glasshouses Streptocarpuses, although going to seed, were exceedingly interesting, and the Gloxinias were grand.

In a Sweet Pea competition held on the same evening many grand spikes of blooms were staged. In a class for three vases, three distinct varieties, Mr. A. W. Gower, Calcot

Grange Gardens, was the only competitor. He had splendid flowers of Powerscourt, Conwin Hinton, and Wonderful. In the class for one vase of one variety, Mr. GOWER was again the only competitor with a beautiful vase of Youth. In a class for a vase of mixed colours there were ten entries. The first prize was won by Mr. A. H. Dow, Calcot Park Gardens, the second by Mr. F. HAINES, Calcot Hanger Gardens, and the third to Mr. F. WELLAND, Merton House Gardens, Reading. A special prize for the best vase in the three classes was awarded to Mr. GOWER for his vase of Powerscourt.

NEWCASTLE AND DISTRICT HORTICULTURAL.

At the last monthly meeting of this Society, Mr. T. Hay, Superintendent of Hyde Park, London, gave a lecture on "The Dahlia." The room was filled with enthusiastic members, and Mr. Hay received a very hearty reception. His remarks were of great interest.

Thirty members of the Society paid a visit to Mr. Sewell, High Croft, Whitburn, on Saturday, the 20th ult., to inspect his interesting rock-garden. Mr. Sewell acted as guide, pointing out the many scarce and valuable plants. Tea was provided, and the chairman of the Society, Mr. R. E. Richardson, moved a very hearty vote of thanks to Mr. Sewell for his kindness.

The Society's annual outing will be on July 11th, when "The Chesters," the seat of Mr. Clayton (gardener, Mr. J. Cocker), will be visited.

ROYAL SCOTTISH ARBORICULTURAL.

A MEMORABLE week closed on Saturday, June 27, during which a large party, numbering over one hundred, of practical foresters visited the famous forests of Glenmhor, Darnaway, Novar, and Beaufort, in the north of Scotland. Arranged by the Royal Scottish Arboricultural Society for the instruction and enlightenment of working foresters, the excursion proved a great success. Inverness was chosen as the headquarters of the gathering, and from thence excursions were made daily.

The first day was devoted to an inspection of Glenmhor, where the Forestry Commission are busily engaged in the formation of new woods. It was explained to the visitors here that the Commission propose to plant 10,000 acres on the property they have acquired, all of which lies within a radius of thirty miles. Already 3,289 acres have been brought under trees, the annual value of which is less than 2s. an acre, and all has been feued. The State thus becomes absolute owner in perpetuity, and the original owner receives a regular yearly income from the feu-duty and is relieved from all public and parish burdens and the expenses of management. A very good bargain from the owner's point of view, one must admit. At Glenmhor the Forestry Commission expend from £6 to £8 per acre in planting to raise a crop which may bring them in from £150 to £300. Some £8,000 are spent in wages, a huge difference when compared with the outlay when the land was used for grazing and sport. Extensive nurseries, stocked with fine healthy plants, have been installed, all of which looked exceptionally clean, and earned the warmest approval of even the nurserymen present. This is the first occasion on which the Forestry Commission have been favoured by a visit of practical foresters, and it afforded them great pleasure to have the critical views their visitors had to give of official efforts, and it likewise gave the representatives of the Commission an opportunity of explaining their methods. Full advantage was taken of

the position, and the time spent in Glenmor proved profitable to all concerned.

The second day was devoted to a visit to the famous forest of Darnaway, owned by the Earl of Moray, an ex-President of the Royal Scottish Arboricultural Society, and an outstanding leader in the cause of afforestation. The party was met and warmly welcomed by the Earl, who was accompanied by Sir John R. Gladstone, Bt., of Fasque, the President of the Society, and Mr. Fenwick, the factor. Led by Mr. M. Feaks, head forester, the visitors first inspected the nursery at Conicavel, where young plants of Pine, Larch, Scots Firs, Sitka Spruce, and other trees were seen at the year-old and two-year-old stages. This nursery extends to five acres, and another at Redstone, visited in the afternoon, measures one-and-a-quarter acres. These nurseries supply all the trees required on Earl Moray's extensive estates in the Highlands and Lowlands. The company then walked through part of Darnaway forest, which is over 3,000 acres in extent, of which 1,000 acres are under hard woods, chiefly Oaks, the remainder being Scots Pine and Larch. Great admiration was evoked here at the fine symmetry and great height of the trees, and special note was taken of the fine sections of Pines and Larches, between seventy and eighty years old. The replanted 200 acres of Pines which were cut down by the Canadians during the war were also seen. After luncheon, provided by Earl Moray, Sir John R. Gladstone asked the company to join him in a hearty vote of thanks to Lord Moray, their host. Probably they had all heard of the Forest of Darnaway, and now they had seen it. The forest dated back an immense time, and under the system now adopted it would go down through the ages. He congratulated Lord Moray on his possession of the forest, and still more would he congratulate the forest on its possession of Lord Moray! If ever a thing was in the right hands, Darnaway was. Sir John then called for three cheers for the Earl, a call enthusiastically responded to.

The Earl of Moray, after assuring the guests of the pleasure it had been to welcome the arboriculturists to Darnaway, went on to give a description of the forest, which, he said, was founded about 1765 by his great-grandfather, who from that year until about 1805 was busily engaged in planting and developing it. The late Mr. Scott, who had been forester for forty-five years, had drafted a report on the forest, dividing it into sixty-five sections. They had adopted his report, and had gone a step further in respect to the planting of the Conifers. Then Mr. Feaks, the present forester had a theory as to what the forest should be fifty years hence. The current year, he said, was a fitting time in which to lay down their conditions. These would be revised in 1950, again in 1975, and again in 2000! The forest museum was afterwards visited by the party, to whom Lord Moray explained many of its remarkable contents.

The third day was spent in visiting Viscount Novar's estates in Ross-shire, where great interest was evinced in the numerous experiments now being made, including plantations of exotic Conifers and Larch underplanted with exotic Conifers, besides several of the Forestry Commission's experimental thinning plots. Growing plantations at various altitudes were visited, one of special interest being an example of regeneration of Scots Fir and Larch 800 feet above sea level, a plantation at an altitude of 800 to over 1,000 feet was seen, mostly of Larch. This plantation, fifteen years old, was awarded the Society's medal in the competition for plantations in connection with the Society's exhibition at the Highland Society's show at Inverness two years ago. In the plantations seen Conifers predominated principally, and there were Scots Pine, Larch, Sitka, Spruce, Thuya, Douglas

Fir, and Norway Spruce, all of which proved extremely interesting.

In the afternoon special attention was directed to the *Abies grandis* area, in which two increment sample plots have been established by the Forestry Commission, one being subjected to a heavy thinning, and the other to a light thinning. Dr. Anderson, of the Forestry Commission, explained that the plots were two of one-hundred-and-fifty odd permanent plots of various species which had been laid down in Britain by the research branch of the Commission since 1920. The main object of the work was to collect information as to the effect of various treatments upon the growth and behaviour of various species under different conditions, and obtain reliable data regarding the rate of growth and production of trees, and especially of the more newly introduced species. The two plots, explained Dr. Anderson, were probably unique in the real sense of the word, being, so far, the most northerly experiment. In the course of the day Sir John R. Gladstone read a message from Lord Novar, who regretted his inability to be present, and hoped that the party would make allowance for the present state of the Novar woodlands. On his return from Australia, he could hardly recognise them owing to the fire ravages and the great cutting during the war. He hoped next year, with the help of the forestry grant, to restock the whole area requiring to be planted, and once more provide the much-needed employment formerly given by these woodlands.

On the call of Sir John R. Gladstone, a warm vote of thanks was accorded Viscount Novar for his hospitality, and Major Munro Ferguson, replied on behalf of his brother.

Thus four extremely interesting days were spent by the foresters in the North of Scotland, and each returned to his home greatly impressed with what can be done and what is being done on behalf of forestry in this far end of Scotland.

PENZANCE HORTICULTURAL.

THE Summer Show, which was opened by the Rev. A. T. Boscawen was a very fine one considering the tropical weather experienced during the previous fortnight.

At the opening ceremony a view was expressed that the Commercial Spring Show was killing the Summer Show, but it is difficult, as expressed by Mr. Venning at the opening, to see how this can be. The Commercial Show receives most of its funds from the trade (who subscribed £150 to the 1925 show), and with a two thousand gate it cannot seriously affect the finances of the Summer Show. Professional, commercial, or amateur horticulturists must work together for the furtherance of horticulture as a whole.

A very fine group of miscellaneous flowering plants was set up by Dr. THORNHILL, Penzance; it included *Coleus*, *Begonia*, *Fuchsia*, *Schizanthus*, *Statice*, etc.: Mr. W. POLSUE and Lt.-Col. HARVEY also staged similar subjects.

The great wealth of Cornish gardens was demonstrated by the exhibits of flowering shrubs staged by Mr. C. H. LE GRICE and Mrs. BOLITHO. The former included the beautiful blue *Solanum aviculare*, *Diervilla Conquante*, *Desfontania spinosa*, *Crinodendron*, *Cassia corymbosa*, *Leptospermum Boscaweni*, and *Grevillea myrsoides*. The group from Mrs. Bolitho included *Salvia Greggii*, *Abelia floribunda*, *Leptospermum Nicholii*, and *Magnolia parviflora*. The *Hydrangeas* staged by Mr. T. R. BOLITHO (gr. Mr. Crook) were a feature of the show.

Dr. THORNHILL was one of the most successful competitors, and in addition to winning the first prize for a group of flowering plants he won similar awards for *Begonias* in baskets, *Pelargoniums*, a bowl of *Roses*, single *Begonias*, a collection of

vegetables, white *Potatoes*, *Cabbages*, *Cauli-flowers*, and *Gooseberries*.

Other successful competitors in the plant and flower classes were Mr. W. POLSUE, who won many first prizes and was particularly successful with *Fuchsias*, *Coleus*, *Ferns* and *Statice*; Mr. F. C. SIMPSON, who secured most of the awards in the Sweet Pea classes and showed some fine *Canterbury Bells*; and Mr. S. G. BAZELEY, who led for a dozen *Roses*.

The cottage garden and allotment holders section was well filled with a collection of exhibits, while non-competitive displays of a high order was contributed by Mr. T. R. BOLITHO, Col. W. L. HARVEY, Mr. W. POLSUE, and Messrs. AVIS AND SON.

ANSWERS TO CORRESPONDENTS.

ACTIVATED SLUDGE: G. L. H. Activated sludge is the solid residue from sewage which has been treated by the activation method, i.e., by keeping it in a constant state of movement by means of jets of compressed air.

APPLE CANKER: T. D. and S. The specimens of Ribston Pippin Apple received are suffering from the common Apple canker disease caused by the fungus *Nectria galligena*. All cankered parts should be cut out, taking care to remove them down to healthy, living wood. All the parts removed, together with any dead wood in the tree, should be burned. A leaflet illustrating the disease may be obtained free from the Ministry of Agriculture, 10, Whitehall Place, London, S.W.

BITTER CUCUMBER FRUITS: H. D. Bitterness in Cucumber fruits is usually connected with slow growth. Any method of cultivation which will increase the rate of growth of the fruits will eliminate the bitter flavour. Straw manure containing sawdust or wood chips should not be used in the preparation of Cucumber beds, otherwise harmful results will accrue. You should top dress your beds with a compost of lime and stable manure mixed in equal proportions and a fortnight later apply a well-balanced Cucumber fertiliser. At this time of the year, when Cucumber plants have borne a heavy crop, it is often advisable to dry out the beds and rest the plants for a week or ten days. This improves the constitution of the plants and enables them to re-act to later forcing.

FIGS ATTACKED BY FUNGUS: G. G. Your Figs are attacked by a parasitic fungus known as *Cercospora Bolleana*. All diseased fruits and leaves should be collected and burnt, and the trees sprayed with diluted Bordeaux mixture, but in very bad cases the trees should be rooted up and burnt and clean stock planted in fresh soil.

MELON LEAF DISEASE: A. B. The blotches on the Melon leaves you sent are the result of infection by a fungus, *Alternaria* sp. Melons grown under glass are frequently injured by fungicides and the cure may be worse than the disease. You might try the effect of dusting the plants with finely divided flowers of sulphur. When your crop is completed the house should be thoroughly cleansed. All the old beds should be removed and the wood work, walls and floor of the house should be sprayed with an emulsion of soft soap and cresylic acid. Afterwards the brickwork should be treated with lime wash and the floor of the house dug over and limed. Any water tanks in the house should be thoroughly cleansed and disinfected.

Communications Received.—R. W. B.—E. T.—R. O.—F. T.—E. G.—M. M.—J. R. B.—C. G.—H. P.—W. A.—J. F.—H. S.—A. M.

MARKETS.

COVENT GARDEN, Tuesday, July 7th, 1925.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Hydrangea	s. d. s. d.
cuneatum	per doz. ... 10 0-18 0	—Blue, 48's per doz. ... 30 0-48 0	
—elegans	per doz. ... 10 0-12 0	Marguerites, white, 48's per doz. ... 15 0-18 0	
Aralia Sieboldii	9 0-10 0	Mignonette, 48's per doz. ... 15 0-18 0	
Araucarias, per doz. ... 30 0-42 0		Nephrolepis, in variety ... 12 0-18 0	
Asparagus plu-mosus	per doz. ... 12 0-18 0	—32's ... 24 0-36 0	
—Sprengeri	per doz. ... 12 0-18 0	Palms, Kentia, 60's ... 30 0-48 0	
Aspidistra, green	36 0-60 0	—60's ... 15 0-18 0	
Asplenium, per doz. ... 12 0-18 0		Pteris, in variety ... 10 0-15 0	
—32's ... 24 0-30 0		—large 60's ... 5 0-6 0	
—nidus ... 12 0-15 0		—small ... 4 0-5 0	
Cacti, per tray, —12's, 15's ... 5 0-7 0		—72's, per tray of 15's ... 2 6-3 0	
Crassulas, 48's per doz. ... 24 0-30 0		Rhodanthus, 48's per doz. ... 8 0-10 0	
Crotona, per doz. ... 30 0-45 0		Roses, Polyantha, 48's per doz. ... 18 0-24 0	
Cyrtomium ... 10 0-25 0		Verbenas, 48's, per doz. ... 12 0-15 0	
Hydrangea		Viscaria, 48's, per doz. ... 15 0-18 0	
White, 48's per doz. ... 18 0-30 0			
—Pink, 48's per doz. ... 18 0-24 0			

Cut Flowers, etc.: Average Wholesale Prices.

Achillea, per doz. bun. ... 4 0-6 0	Iris, English per doz. bun. ... 12 0-15 0
Adiantum deco-rum, doz. bun. ... 9 0-10 0	—Blue ... 12 0-15 0
—cuneatum, per doz. bun. ... 6 0-8 0	—Mauve ... 12 0-15 0
Alstromeria, per doz. bun. ... 8 0-9 0	—White ... 12 0-15 0
Asparagus plu-mosus, per bun. long trails, 6's ... 2 0-3 0	Lapagerias, per doz. blooms ... 3 6-4 0
med. sprays ... 1 6-2 6	Lilium longiflorum long, per doz. ... 2 0-3 0
short ... 0 9-1 3	—lancifolium album, long, per doz. ... 4 0-5 0
—Sprengeri, per bun. long sprays ... 1 6-2 0	—short, per doz. ... 4 0-5 0
med. ... 1 0-1 6	—speciosum rubrum, long, per doz. blooms ... 4 0-5 0
short ... 0 4-1 0	—short ... 3 0-5 0
Carnations, per doz. blooms ... 1 6-3 0	Lily-of-the-Valley, per doz. bun. ... 24 0-30 0
Chrysanthemum maximum, doz. bun. ... 5 0-6 0	Orchids, per doz. —Cypripediums ... 24 0-36 0
Coreopsis, per doz. bun. ... 2 0-3 0	—Cypripediums ... 5 0-7 0
Cornflower, per doz. bun. ... 2 6-3 0	Pinks, Her Majesty, per doz. bun. ... 4 0-6 0
Croton leaves, var. doz. leaves ... 0 9-2 6	—Mrs. Sinkins, per doz. bun. ... 3 0-3 6
Delphiniums, various, per doz. spikes ... 2 0-3 0	Richardias (Arums) per doz. ... 4 0-5 0
Fern, French, per doz. bun. ... 0 9-1 0	Roses, per doz. blooms, Richmond ... 2 0-3 0
Gallardia, per doz. bun. ... 5 0-6 0	—Liberty ... 2 0-3 0
Galax, American, green and bronze, per doz. bun. ... 1 0	—Madame Butterfly ... 2 0-4 0
Gardenias, per box, 12's, 18's ... 6 0-12 0	—Mme. Abel Chatenay ... 1 6-2 6
Glaudiolus, Blush-ing Bride, per doz. bun. ... 12 0-15 0	—Melody ... 2 0-3 0
—White, per doz. bun. ... 12 0-15 0	—Molly Sharman Crawford ... 2 6-4 0
—Peach Blossom, per doz. bun. ... 12 0-15 0	—Ophelia ... 2 6-3 0
—primulinus, per doz. spikes ... 2 6-3 0	—Sunburst ... 2 0-3 0
—Halley, per doz. spikes ... 4 0-5 0	Scabiosa caucasica, per doz. bun. ... 5 0-7 0
—Prince of Wales, per doz. spikes ... 5 0-6 0	Smilax, per doz. trails ... 3 0-3 6
—Scarlet, per doz. spikes ... 5 0-6 0	Statice, mauve ... 9 0-12 0
—Cream per doz. spikes ... 5 0-6 0	Stephanotis, per 72 plps ... 2 6-3 0
—Giant White, per doz. spikes ... 4 0-5 0	Stock, English white ... 8 0-15 0
Gypsophila, white, doz. bun. ... 9 0-12 0	Sultan White, per doz. bun. ... 6 0-9 0
Iceland Poppies ... 2 0-3 0	—Mauve, per doz. bun. ... 8 0-10 0
	—Yellow, per doz. bun. ... 9 0-10 0
	Sweet Peas, per doz. bun. ... 5 0-12 0
	Violas, per doz. bun. ... 1 0-1 6

REMARKS.—Business generally has been quiet during the past week. Outdoor flowers have been a little more plentiful and prices of most subjects are easier. The supplies of Alstromeria, Achillea, Sweet Sultans, Sweet Peas, Clarkias and Coreopsis all appear to be sufficient for present requirements. Statice sinuata is arriving in much larger quantities. English White Heather is the newest subject in this department. Large-flowered Gladioli are arriving in good condition. Supplies are more plentiful and various sorts are offered. The Gandavensis type is much shorter in supply; small consignments of these blooms are now coming to hand from Holland. Carnations are ample for all requirements but vary in price according to quality; many blooms reached the market in a curled condition during last week, notwithstanding that the weather was much cooler. Roses also fluctuate in quality and price, the majority being very medium. Supplies of

outdoor blooms are short and such sorts as Mrs. J. Lalag, Molly Sharman Crawford, Frau Karl Druschki and Ulrich Brunner are soon cleared. Lilium longiflorum continues to arrive in excellent condition and is at present one of the cheapest flowers on the market. L. lancifolium album and L. rubra are increasing in number. A few blooms of L. auratum are also on offer. Other choice flowers include Gardenias, Lapagerias, Stephanotis, and Lily-of-the-Valley; only occasionally are a few Orchid blooms on offer. All foliage appears to be in ample quantities for requirements. Asparagus plumosus, A. Sprengeri, Maidenhead Fern, Smilax, and various sorts of hardy foliage are obtainable.

Fruit: Average Wholesale Prices.

Apples—	s. d. s. d.	Grape	s. d. s. d.
New Zealand—		Cuban ... 40 0-42 6	
—Rome Beauty ... 16 0-18 0		—Jamaica ... 40 0-42 6	
—Sturmer ... 18 0-20 0		—Florida, finest ... 45 0-50 0	
—Rokewood ... 16 0-19 0		Lemons, Messina, per box ... 12 0-15 0	
Tasmanian—		—Murcia ... 16 0-22 6	
—Cleos ... 17 0-18 0		—Naples ... 18 0-20 0	
—Sturmer ... 17 0-18 0		Mandarines ... 5 0-6 0	
—Others ... 14 0-15 0		Melons (Forced) ... 3 0-8 0	
Bananas ... 16 0-27 6		Cantaloupes ... 6 0-15 0	
Cherries, White, English ... 10 0-12 0		Nectarines, per doz. ... 10 0-30 0	
—Black, English ... 15 0-20 0		Oranges, Jaffa ... 16 0-18 0	
—Dutch ... 10 0-14 0		—Spanish—	
Cherry Plums, per box ... 12 0-14 0		—300's ... 30 0-40 0	
Currants, Black, English ... 0 7-10 10		—360's ... 30 0-35 0	
French ... 0 6-0 7		—504's ... 25 0-30 0	
—Red ... 0 0-0 8		Peaches, English per doz. ... 12 0-36 0	
Figs (Forced) doz. ... 3 0-12 0		Pines ... 5 0-8 0	
Gooseberries, per sieve ... 4 0-7 0		—South African box ... 6 0-7 0	
Grapes—		Plums, Spanish, per crate ... 9 0-12 0	
—Alicante ... 1 6-3 0		Raspberries ... 0 8-1 2	
—Belgian ... 1 9-2 0		Spanish Apricots—	
—English ... 1 6-3 0		—per sieve ... 10 0-12 0	
—Hambro, per lb. ... 1 6-3 6		—per crate ... 8 0-10 0	
—Muscat ... 3 0-8 6		Strawberries, chips ... 2 0-4 0	
—Canon Hall ... 5 0-12 0			

Vegetables: Average Wholesale Prices.

Beans, Guernsey, per lb. ... 1 6-2 0	Onions, Egyptian, per bag ... 12 0-13 0
—Worthing ... 1 6-2 0	—English, per cwt. ... 12 6-14 0
Beets, per cwt. ... 5 0-8 0	—Spring per doz. ... 6 0-7 0
Broad Beans, per bushel ... 8 0-10 0	—Parsnips, per cwt. ... 6 0-8 0
Cabbage, per tally ... 10 0-15 0	Peas, English per bushel ... 10 0-15 0
Canary Island Tomatoes ... 18 0-22 6	—1-bag ... 10 0-12 6
Cauliflowers, per doz. ... 4 0-7 0	Potatoes, per ton—
Carrots, new, per doz. bun. ... 7 0-9 0	—Old, per cwt. ... 5 0-7 6
Cucumbers, per doz. ... 5 0-6 0	—English, per bushel ... 3 0-4 6
—Plate, 38's, 42's ... 18 0-20 0	—Canary Island ... 8 0-12 0
Dutch Onions ... 11 0-12 0	—St. Malo, per cwt. ... 7 0-7 6
Endive, per doz. ... 2 6-3 0	—New Guernsey, per cwt. ... 6 0-8 0
Greens, best, per bag ... 4 0-5 0	—Jersey, per cwt. ... 6 0-8 0
Horse radish, per bundle ... 2 0-2 6	Rhubarb, per doz. ... 6 0-7 0
Lettuce, Cos, doz. ... 1 6-4 0	Spinach, per bushel ... 6 0-7 0
—Cabbage Let-tuce, ... 1 6-2 6	Tomatoes, English, per lb.—
Mushrooms, cwt. ... 2 0-2 6	—Pink ... 7 6-8 6
—broilers ... 1 3-1 9	—Pink & White ... 8 0-9 0
Marrows, doz. ... 6 0-12 0	—White ... 6 0-7 0
	—Blue ... 6 0-7 0
	Guernsey ... 7 0-8 0
	Turnips, new, per doz. bun. ... 8 0-10 0

REMARKS.—A fair volume of business is being transacted, the fine weather being a strong factor in favour of the consumption of all fruits. Hothouse Grapes, Melons, Peaches, Nectarines and such like choice fruits are selling fairly well now that the bulk of the Strawberry crop has been marketed. Raspberries, Red Currants and Black Currants are moderately plentiful and selling at good prices. Gooseberries are abundant but parcels of really green berries are wanted. The first dessert Gooseberries are now available and are selling well. Cherries are more abundant but quotations are not low for firm, dry fruits. Apricots and Plums from Spain are not quite such a free market, other fruits now being available. Apples from Australia, New Zealand and Tasmania are inclined to be a better business. Tomatoes from the Lea Valley district and Worthing are more abundant, but quotations are fairly steady, although perhaps a shade weaker. Cucumbers are arriving in quantity and in this section a slower trade is reported. Salads continue to be in good demand. Green vegetables are scarce; good Peas are not plentiful and French Beans maintain a high price level, but Mushrooms are cheaper. The trade in new Potatoes has slightly improved.

GLASGOW.

Apart from Carnations and Irises which represented a large proportion of the daily supplies, cut-flowers continued scarce during the past week. Considerable quantities arrived in a heated condition, and good quality blooms were at a premium in consequence. As Carnations are flowering rapidly under present weather conditions, growers in the south despatched boxes by the hundred each day, and, as was to be expected under the circumstances, prices ruled low at 13 to 2/- per dozen for medium, and up to 3/- for special qualities. Blue, white, and yellow Irises were worth from 4d.

9d. for 6's, and 9d. to 1/3 for 12's. Ordinary Sweet Peas made 3d. to 8d., and special 9d. to 1/-. Marguerites ranged from 2d. to 6d. per bunch; Lilium longiflorum (Harrissii), 2/3 to 2/6; Gladiolus The Bride, 7d. to 1/-; Gypsophila was cheap, small bunches making 2d. to 4d., and large 6d. to 1/-; white Pinks realised 2/- per dozen, extra large 1/- per bunch; Asparagus Fern (small) sold for 3d., and medium at 8d. to 9d., and large 1/6 to 2/- per bunch. Quantities of Roses were in a blown condition, and blooms of Madame Abel Chatenay were obtainable at 2/- to 3/6 per dozen, Richmond at 1/6 to 2/6, and Madam Butterfly 2/- to 3/-.

In the fruit department supplies of English Staw-berries are gradually getting smaller, while Scotch fruit is increasing in quantity, and present indications point to a very short season. Owing to the absence of rain the Scotch-grown berries are undersized. Wisbech berries averaged 6d. to 8d. per lb., Scotch, 5d. to 1/2, and a small lot of selected specimens which attracted keen competition made as high as 1/9 on Friday. English Cherries fluctuated between 18/- to 20/-, French Cherries, 12/- to 16/-; home Gooseberries made 24d. to 34d. per lb.; Black Hamburgh Grapes, 2/6 to 3/6 per lb.; Peaches, 12/- to 18/- per dozen; Pines, 2/6 to 5/- each; Melons, 3/- to 5/-; and English Black Currants, 1/3 per lb. Apples were practically unchanged at 20/- to 22/- per case for New Zealand Sturmer and Statesman, and Australian Cleopatra and Sturmer. Pears are scarcer at 12/- to 14/- per tray. Grape Fruit was worth 38/- to 42/- per case; Sunkist Oranges, made 28/- to 32/-; Spanish Oranges, 200 and 240, 20/- to 30/-; 300, 30/- to 35/-; and 420, 40/- to 50/-; while Lemons sold from 18/- to 22/-.

The vegetable market continued active, the demand for Salads being well maintained. Lettuces are now plentiful, and their prices experienced a sharp decline, Scotch averaging from 1/3 to 2/3, and English from 1/6 to 2/-. Dutch Cucumbers were also lower at 2/- to 4/- per dozen, and while the poorer qualities of Scotch Cucumbers only made 4/-, up to 9/- was paid for well-grown specimens. Cauliflowers were cheaper at 5/- to 6/6 per dozen; Tomatoes are ripening quickly, and the quality and colour showed an improvement, but, as a result of increasing production, prices dropped during the early days of the week and recovered a little towards the close. Over the six-day period Scotch Tomatoes averaged from 9d. to 1/3, and English and Guernsey from 8d. to 9d.

THE WEATHER FOR JUNE.

BRIGHT, warm, and dry summarises the weather during June. The temperature was above normal throughout the month: the mean being 57° Fahr. The mean maximum was 66° and the mean minimum 48°. The warmest day was the 10th, when the thermometer recorded 80° in the shade. On several other days it was well over 70°. The lowest maximum of 57° occurred on the 7th and 8th, and the lowest screen minimum of 43° on the 22nd. On the 3rd and 24th the temperature fell to 38° on the grass, but the average ground temperature was 44°. At one foot deep, the soil temperature rose from 33° at the beginning to 59° on the 19th, remaining at that figure up to the close of the month. Sunshine gave the remarkably good total of 232 hours, being a daily average of about eight hours and a percentage of 43. (This has not been exceeded since June, 1921). The two brightest days were the 22nd and 24th, with 14.2 and 14.6 hours respectively. There was only one sunless day, viz., the 3rd. There was only four rain days during the month—the 2nd, 3rd, 5th, and 30th, which contributed the small total of 6 inch or 6.6 millimetres. (This was the driest June since 1921, when only 4.3 inch was recorded). Atmospheric pressure was very steady throughout, being greatest on the 11th—1,028.3 mbs. (30.365 inches) and least on the 16th—1,011.0 mbs. (29.857 inches). The mean was 1,019.8 mbs. (30.115 inches). Rain, accompanied by thunder, was experienced at 12.45 p.m. on the 2nd and a bright rainbow was noted at 8.25 p.m. on the 19th. John Davidson, Meteorological Station, The St. Andrews Training College Gardens, Mayfield, Dundee.

SCHEDULES RECEIVED.

GLoucestershire Root, Fruit, and Grain Society.—Sixty-second show to be held at the Shire Hall, Gloucester, on Monday, November 9.—Secretary, Mr. S. S. Starr, 11, London Road, Gloucester.

Montrose Horticultural Society.—Jubilee exhibition to be held in the Drill and Recreation Halls, Montrose, on Friday and Saturday, August 21 and 22.—Secretary, Mr. J. Drummond Smith, 1, Railway Place, Montrose.

CATALOGUE RECEIVED.

RICHARD MELHUSH, LTD., 50, Fetter Lane, Holborn Circus.—Horticultural Sundries; Cutlery.

GARDENING APPOINTMENTS.

Mr. Charles Harris, for the past four years Foreman at Wignore Park, near Dorking, as Gardener to S. KAYE, Esq., Old House, Coolham, Horsham, Sussex.

Mr. C. W. Slatter, for six years Foreman at Bulstrode Park, as Gardener to CAPT. A. TICKLER, Upton Court, Upton, near Slough. (Thanks for 5s. for R.G.O.F. Box.—Eds.).

SITUATIONS VACANT

PRIVATE.

G. TAYLOR. The Gardens, Bulstrode Park, thanks the numerous applicants for situation, Man and his Wife for Lodge. The place is now filled.

WANTED, HEAD - WORKING GARDENER where three others kept; must be good organizer of labour and have experience of poultry; good cottage; situation vacant second week of August.—Apply **G. P. ST. GEORGE**, Ledsham Hall, Little Sutton, near Birkenhead.

HEAD WORKING GARDENER required, experienced in all branches, also Oreluds; unmarried; live in; state wages.—**MRS. SPROSTON**, Elm House, Nantwich, Cheshire.

HEAD WORKING GARDENER wanted, experienced Inside and Out; under man kept; no cottage.—**MISS DUGDALE**, The Grove, Croxley Green, Herts.

GARDENER, SINGLE-HANDED. Wife as Cook-General; also vacancy for a daughter; live in quite separate apartments, furnished or unfurnished; country village.—Apply **G. C. A.**, Box 11, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, good, all-round GARDENER for small place; garden boy kept; cottage.—Apply **Mrs. BROOKE**, Williamsot House, Banbury.

WANTED, experienced GARDENER, married, help given, for country.—Apply, giving full particulars, **ESTATE OFFICE**, Hareby, Spilsby, Lincs.

YOUNG SECOND GARDENER required, age 25-30, preference single man; bothy. Wages 30/-, four others kept.—**CAPT. TICKLER**, Upton Court, Slough.

UNDER-GARDENER wanted, Inside and Out; bothy; duty paid.—Age, experience, and wages required to **GILLAM**, Ridgehurst, Shenley, Barnet, Herts.

WANTED, experienced UNDER-GARDENER, Inside, wages 34/- per week, no bothy, 5/- extra for duty, good references essential.—Apply **HEAD GARDENER**, Presdale Hall, Ware, Herts.

GARDENER, UNDER, required for Pleasure Ground and assist generally in gardens and attend to central heating; good cottage and light provided.—Apply by letter, stating age, wages required, with copies of references, **DUFFY**, Brooklands, Broomfield, Essex.

WANTED, UNDER GARDENER, single, about 24 or 25 years, experienced, work chiefly in greenhouses, take turn duty; no bothy; gardener's reference.—State age, experience, wages, etc., to **R. C. COODE, Esq.**, Polapit Tamar, Launceston, Cornwall.

WANTED at once, single MAN, thoroughly experienced, for Inside and Out, must have good references, bedroom found.—Apply **HEAD GARDENER**, Down Place, Guildford.

YOUNG MAN wanted for Inside work, vines, Peaches, Carnations and Chrysanthemums, wages 32/-, duty 5/-, and bothy.—Apply with references, **MISS RUSSELL**, Normanswood, Farnham, Surrey.

WANTED, a reliable married MAN to take charge Inside, must be thoroughly experienced with Carnations, Vines, Melons, and the forcing of fruit and flowers. Wages 37/-, good house and garden and electric light provided.—Apply, stating age, with copies of testimonials, to **AGENT**, Chapel Cleeve, Washford, Som.

WANTED, thoroughly competent MAN, single, to take charge of fruit and plant houses. Mums., etc. Wages 50/- week, no bothy.—**A. R. W.**, Box 13, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, thoroughly experienced Fruit, Veg. GARDENER, single. Wages £3, lodgings available.—Write full particulars, refs., **KIRCH**, Albemarle Road, Beckenham, Kent.

FOREMAN wanted, to take charge of Fruit Plantation in Cambridgeshire, must be thoroughly experienced, with good references; a thorough knowledge of fruit culture, pruning, spraying, and planting essential; cottage found.—Apply, giving fullest particulars in confidence and wages required to **C. K.**, Box 6, 5, Tavistock Street, Covent Garden, W.C. 2.

FOREMAN wanted, an experienced man with a thorough knowledge of flowering shrubs and herbaceous plants; capable of taking responsible control of outdoor staff and work, including herbaceous borders of considerable extent; applicants must state particulars of experience; good wages with house.—Write **C. E. G.**, Box 5, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, FOREMAN, Inside, fruit, plants; also **JOURNEYMAN**, Inside. Apply, stating age, references: bothy.—**GARDENER**, Stanford Hall Gardens, Loughborough.

WANTED, Pleasure Ground FOREMAN; also **MAN** for Rock Gardens and to assist the above. Good wages and cottages.—**HEAD GARDENER**, Garston Manor, near Watford, Herts.

WANTED, two KITCHEN GARDENERS, one to take lead the other to assist the above. Good wages and cottages.—**HEAD GARDENER**, Garston Manor, near Watford, Herts.

WANTED, married MAN for pleasure grounds, not over 30, one understands Dennis motor mower preferred, good house, etc.—Apply **E. S. HAYES**, Lythe Hill Gardens, Haslemere, Surrey.

WANTED, vegetable and hardy fruit GARDENER (single), capable, energetic, good references essential, wages 35/- to 40/-, duty every third week, state when free and age, send copy of references.—**W. J. PURDY**, Hookfield Park, Epsom.

WANTED, experienced KITCHEN-GARDENER, one with Inside knowledge preferred, state age, wages required with cottage, good references, necessary.—**MARTIN**, Bartley Lodge Gardens, Cadnam, Hants.

YOUNG MAN, single, for pleasure grounds; wages 35/-; comfortable board and lodging on estate.—Write, with copies of refs., to **E. KILLICK**, Burrows Lea Gardens, Shere, Surrey.

WANTED, MAN for kitchen and pleasure grounds, age not under 25, wages £1 per week with bothy and board.—Apply with references.—**F. SPARKS**, Pinewood, Farnborough, Hants.

WANTED, a good (single) LEADING MAN for kitchen gardens and fruit trees, able to sow seeds, liberal wages given, with bothy and vegetables. Also **IMPROVER**, 17 to 18, chiefly for Inside work, bothy and vegetables.—**HEAD GARDENER**, Hanstead House, Bricket Wood, Herts.

WANTED, a JOURNEYMAN for Plant and Fruit Houses; also one for Outside with some knowledge of alpinists; good wages paid according to experience; bothy, vegetables, and attendance; duty paid extra.—State age and wages required to **BASTIN**, Buscot Gardens, Faringdon, Berks.

WANTED, JOURNEYMAN, well up in Cars., fruit, etc. Wages 36/-, duty 5/- extra.—**F. TAPPER**, Westbury Manor, Brackley.

WANTED, good JOURNEYMAN to take charge of fruit and plant houses, must be good with Carnations and Chrysanthemums, wages 35/- with bothy, milk and veg., duty paid.—Apply to **T. VARDELL**, The Hall Gardens, Pinner, Middlesex.

WANTED, JOURNEYMAN for kitchen garden work, able to take duty, wages 30/- with bothy.—**O. TWITCHETT**, The Gardens, Gorhambury, St. Albans.

WANTED, JOURNEYMAN GARDENER, well up Inside and Out; seven kept; no bothy. State age, wages required, and full particulars with references.—Apply **HEAD GARDENER**, Heathfield Park, Heathfield, Sussex.

WANTED, at once, active JOURNEYMAN, Inside, under Head; experience fruit and plants, no bothy.—Full particulars, refs., wages, etc., to **J. G. JACKSON**, Tending Hall Gardens, Stoke-by-Nayland, Suffolk.

CAN any Head Gardener recommend a good JOURNEYMAN for Pleasure Grounds. 35/- per week, bothy, milk and vegetables.—Apply to **F. CAPP**, Nostell Priory Gardens, Wakefield.

WANTED, experienced JOURNEYMAN to take lead, Inside, must be good at Carnations, Mums., and decorating; wages 38/-, bothy, duty 5/-.—**F. J. FOSTER**, The Gardens, Grinstead Castle, Bourne, Lincs.

WANTED, JOURNEYMAN for Outside, able to take duty.—Particulars and wages, with bothy, to **A. WILSON**, Llanstephan House Gardens, Boughrood, Radnorshire.

WANTED, experienced JOURNEYMAN for vineries, etc., and to assist generally, state age, wages, and references, to **R. J. VAUGHAN**, Londesborough Park Gardens, Market Weighton, York.

WANTED, IMPROVER, about 19, with knowledge of potting, tying, and watering.—Apply to **BISHOP**, Duxbury Park Gardens, Chorley, Lancashire.

WANTED, experienced COWMAN for cows, beasts, poultry, pony, 6 acres land, willing to generally help on estate; good references essential; cottage, State wages and private experience.—Apply **THE PRIORESS**, Sneaton Castle, Whitby, Yorks.

GARDEN ESTATE-LABOURER wanted, used to scythe and tree felling; bothy.—Experience, age, wages to **GILLAM**, Ridgehurst, Shenley, Barnet, Herts.

TRADE.

WANTED, ALPINE PROPAGATOR, with first-class knowledge of potting and plunging; single man preferred.—Particulars, stating age and wages required, to **FRED LONGSTER**, F.R.H.S., London Road, Southampton.

ORCHID GROWER wanted for trade place in Prague (Czechoslovakia); one who has some knowledge of growing market plants preferred; must have some knowledge of German.—Apply, in first instance, to **BLACK & FLORY**, Slough.

HERBACEOUS and ALPINES.—Smart **MAN** (unmarried), with good knowledge of propagation, lifting, despatching, etc., wanted by Scotch firm; wages 60/-.—Apply, with refs., etc., **S. T.**, Box 40, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, a good reliable and willing young MAN, interested in Tomatoes, Cues., Chrys., etc., full particulars and wages required to **MANAGER**, Heathfield Nurseries, Pensby Road, Thingwall, near Birkenhead.

WANTED, HEAD SHOPMAN for seed, bulb and nursery business.—Particulars, stating age and wages required, to **FRED LONGSTER**, F.R.H.S., London Road, Southampton.

SEED AND BULB TRADE.

ASSISTANT wanted for shop or mail order department.—Apply by letter stating age, experience and salary required, **BARR & SONS** (Private), 12 and 13, King Street, Covent Garden, W.C. 2.

WANTED for Retail Trade, TRAVELLER, thorough up-to-date knowledge and practical experience in all branches of horticulture absolutely essential. A good opening is offered for an experienced young man with energy and resourcefulness. Write giving age, references and details of experience. State salary, commission and expenses required, to **B. N. 1.**, Box 9, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED. — REPRESENTATIVE, with good knowledge of the nursery and seed business; must be a young and successful salesman, of good appearance, and capable of advising clients; excellent prospect for an active, energetic man with the necessary push and qualifications; motor cycle found.—Reply, with full particulars as to age, experience, and salary expected, to **KING'S ACRE NURSERIES, LTD.**, Hereford.

WANTED, a young ASSISTANT SALESWOMAN in the seed and bulb shop of a good class business; a knowledge of floral work would be a great advantage.—Full particulars and wages required, to **HILLIER & SONS**, West Hill Nurseries, Winchester.

FLORIST, good SALESWOMAN and MAKER U.P.—State experience and wages required to **JAMES NASH & SONS**, 11, High Street, Wimbledon, S.W. 19.

WANTED, near London, capable FLORIST and SALESWOMAN, to take charge of branch nursery shop. Knowledge of nursery stock preferred.—**W. H. W.**, Box 12, 5, Tavistock Street, Covent Garden, W.C. 2.



RHODODENDRON IMPEDITUM.

THE Gardeners' Chronicle

No. 2012.—SATURDAY, JULY 18, 1925.

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SUPPLEMENTARY PLATE.

Rhododendron impeditum.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62°·0°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 15, 10 a.m. Bar, 30·3, temp. 60°. Weather, Sunny.

BEFORE the advance of science the mysteries of life recede but grow greater. Of the mysteries none has guarded its secrets more jealously or more successfully than that of the power of the seed to maintain its life for long periods of years. Popular superstition, which persists by exploiting and magnifying error, claims that seeds are all but immortal. It asks us to believe that mummy Wheat will germinate after an interval of rest of several thousand years. For such believer, however, there is no support save in the incorrigible credulity of mankind; yet what the length of time may be that puts a final veto on the life of the most enduring seed remains unknown. As Dr. A. von Degan states in a lecture* on the longevity of seeds, the seeds of Nelumbium appear to hold the record in the way of defying time. Seeds of Cassia bicapsularis have been shown to germinate after eighty-seven years from harvesting and those of Cytisus biflorus after eighty-four years. Science seems inclined to place

a limit of one-and-a-half to two-and-a-half centuries on the life of the seed. The reason for this opinion, and it is hardly more than an opinion, would appear to be that one of the conditions—dryness—which promotes longevity tends also to promote dissolution. Seeds dried thoroughly, as for example by exposure to a temperature of 80° C. for some six days, are capable of enduring the greatest of extremity without impairment of their power of germination—freezing at temperatures so low as 220° of frost, heating above the boiling point of water, and exposure to poisons, are all alike impotent to rob the desiccated seed of its power of germination. The seed so treated brought once again into congenial conditions germinates. Yet the powers of seeds to retain life are as slender as they are strong. Seed of a poor harvest soon fails, whereas that of a good harvest may retain powers of germination for many years. It may be that seeds kept for a long time are, as it were, worried to death. They are dry enough to resist the innate tendency to grow so long as external conditions are unfavourable to life. But if temperature rises they are beguiled into making an effort. The effort taxes their vitality and so after years of spasmodic and futile effort there is no health left in them and they pine away and die. But what if perfectly dried seeds were kept under constant conditions of low temperature in an atmosphere of oxygen? Would they live for ever or would they also lose their lives as the centuries flow by? To this question science can as yet give no confident answer. Nor can science say why it is that the resting seed—kept under less ideal conditions for preserving life by preventing living, should ever die. One exquisite means which appears to have been evolved as a serviceable expedient is the natural "bottling up" of the seed's activity by carbon dioxide. In the last stages of ripening the carbon dioxide evolved by the respiring seed is held in the seed coats. In this state the coats of the seed are impermeable to water. And so the naturally dried-off seed lies and rests in the ground until such time as the seed coats—rotting or undergoing other change—lose their carbon dioxide and in so doing open the way to the entrance of water and the awakening of life in the seed. It is curious that these subjects of life and death of seeds have not been investigated more thoroughly. For investigators there is plenty of material. Not all seeds run after immortality. Some give up very soon. The Parsnip and the Dandelion and the Onion have but slender powers of endurance—their life is buckled in by a short span of years. These fugaceous ones might, perchance, in yielding up the secret of their death disclose the secret of the life of the more enduring kinds of seeds. How well it pays the plant to confer longevity on the seeds it bears may be judged from the number of seeds which are cast annually into the ground. Mr. K. Dorph-Petersen, in the course of the Seed-testing Congress already referred to, enumerated the number of seeds found in arable soil. He found that in a six-inch cube of earth taken from the top layer of soil there were more than 100,000 seeds of farm weeds. To succeed in such a congested area a seed must have exceptional powers—either to spring up quickly or to wait till its competitors have passed away.

Our Supplementary Plate.—Nearly three dozen species of Rhododendron characterised by their dwarf habit, often cushion-like or carpeting the ground, are included in the "Lapponicum" series. Three species only are known outside China, and most of the Chinese species are found at a considerable altitude. Several of these interesting, free-flowering, lowly shrubs have been figured in these pages, and one other, *R. impeditum*, is illustrated in the Supplementary Plate which accompanies the present issue. Rhododendron *impeditum* is a dwarf, matted shrub, with a stature of from six inches to twenty inches, and bears light, purplish-blue flowers quite freely. It is distinguished from *R. fastigiatum* by its dark green foliage, whereas in the latter species the leaves present a hoary appearance. According to Balfour and Smith, *R. scintillans* is the nearest ally of *R. impeditum*, but whereas the leaves of the former are narrowed to the ends, those of *R. impeditum* are elliptic and rounded. *R. impeditum* was found by Forrest on both the eastern and the western flanks of the Lichiang range; on the eastern flank it was found from 15,000 to 16,000 feet altitude, and did not exceed a height of twelve inches, whereas on the western flank the altitude varied from 12,000 feet to 13,000 feet, and the plants ranged from six inches to twenty inches in height. Under cultivation *R. impeditum* has already become fairly well known as a free-flowering, neat-habited species, extending along the ground and rarely rising more than a few inches. At Kew it flowers a week or so later than *R. intricatum* (*Gard. Chron.*, April 6, 1918, p. 144).

Importation of Plants into Ceylon.—The Ministry of Agriculture desires to bring to the notice of nurserymen and others the purport of the regulations recently issued by the Government of Ceylon governing the importation of plants, etc., into that country. These regulations prescribe Colombo and Talaimannar as the only ports of entry and require each consignment to be accompanied by an official Certificate of Health to the effect that the plants, etc., are free from diseases and pests. This certificate must have been issued in the country of origin after an actual inspection of the plants not more than fourteen days prior to the date of shipment; it must be produced to the Customs Officer at the port of entry and when consignments of plants are sent through the post a copy must be affixed to each package. It has further been decided that for a period of six months from June 1, 1925, all plants (excepting seeds) whether accompanied by certificates or not, are to be sent to the Fumigatorium, Colombo, for inspection and, if necessary, fumigation and disinfection. Seeds packed in hermetically sealed tins will be passed by the Customs or Post Office without being sent to the Fumigatorium, but seeds imported in bags or packets will be inspected, and if necessary, fumigated or disinfected. The Ministry has been asked by the Director of Agriculture, Ceylon, to impress upon exporters that the Health Certificates will not be accepted by the Ceylon authorities unless they are issued as the result of an inspection made not more than fourteen days prior to the date of shipment. Parcels sent by post should, whenever possible, be packed in wooden boxes.

London Allotment Holders' Exhibition.—Under the auspices of the National Union of Allotment Holders, the Vacant Land Cultivation Society, and the Worshipful Company of Gardeners, an exhibition will be held at the Royal Horticultural Society's hall on September 4 and 5, at which allotment holders in the London district will compete for the prizes offered in forty-four classes, while the bee-keepers of the district have six classes provided for them. The principal classes are those for collections of vegetables, the

* Report of the Fourth International Seed-Testing Congress in Cambridge, England, in 1924. Published by H.M. Stationery Office, Adastral House, Kingsway, W.C.2. Price 11s. 6d. net.

vegetable section alone extending to twenty-four classes. There are ten classes for flowers, four for fruits, seven ladies' classes for preserves and home-made bread, and three childrens' classes, the latter including one for a collection of six kinds of vegetables grown in a school garden. The first prize in this class is twenty shillings, and a Challenge Shield which has to be won three times in succession to become the property of any competitor. An interesting class is the one for the best school allotment diary, open to school children in the home counties, while another is for wild flowers gathered by the exhibitor. The Challenge Shield and all other prizes in the childrens' classes are presented by the Beckenham and District Allotment Society.

Sweet Pea Trials in Scotland.—Invitations have been issued for the inspection of the Sweet Pea trials at Helensburgh on Saturday, 18th inst., where it is expected that a large number of those interested in Sweet Peas will take advantage of what is a unique occasion in Scotland to judge the merits of novelties produced by raisers in America, England and Scotland. The plants, which are flowering freely, were grown by Mr. John Smillie, the hon. secretary of the Scottish National Sweet Pea, Rose, and Carnation Society.

Napoleon Willows.—The French papers announce the removal of a historic tree from the park of the Prefecture of Versailles. This tree is a weeping Willow which originated as a cutting taken from the tree overhanging the tomb of Napoleon at St. Helena and brought to France in 1832 by Lieut. Drouville. Three cuttings were thus taken and sent to Messrs. Polonceau and Lacroix, at Versailles, who planted one on a private estate, and the other two in the garden of the Versailles College of Horticulture (then the "King's Kitchen Garden") and the garden of the Normal School, which has since become the park of the Prefecture. For many years now the only survivor has been the Willow in the Prefecture Park, a very fine tree, which attained to imposing proportions; but some time ago it began to show signs of decay, and it was blown down during the recent gales. There are in France, as in England, quite a number of so-called "Napoleon" Willows, produced either from cuttings sent direct from St. Helena, or from cuttings from the trees originally introduced. An interesting article from the pen of M. Ch. Morren on the subject of these Willows was reproduced in *Lyon Horticole* for August 30, 1915. Cuttings are said to have been first introduced into England in 1823. A curious fact recorded by M. Morren is that all the trees thus imported were of the male sex, whereas all the weeping Willows previously known were female. There is no species of Willow which is indigenous to St. Helena, and the tree which overhung the tomb of Napoleon originated in an importation of trees and shrubs which General Beatson, Governor of the Island, introduced from England in 1810.

Paisley Florists' Outing.—Fine weather favoured the summer outing of the Florists' Society of Paisley on Saturday last, when the members travelled to Rothesay and spent the afternoon inspecting the gardens and grounds of Arden-craig, the residence of Sir John Reid. The visitors were received by Lady Reid in the absence of Sir John, who was attending the investiture at Buckingham Palace, and they were afterwards shown round the wooded grounds, with their rustic bridges and waterfall. The various greenhouses were next visited under the guidance of Mr. John Davidson, the gardener, and Mr. R. D. Whyte, Town Clerk of Rothesay, who commented on the more important plants in the collection. The display of bloom was particularly fine, and the Fernery was specially admired. On the termination of the inspection the company was entertained to tea on one of

the lawns, and before departing on the homeward journey, the hospitality of Sir John and Lady Reid was acknowledged by a hearty vote of thanks.

List of Flower Shows.—Messrs. Austin and McAslan, nurserymen, Glasgow, have sent us a copy of their booklet containing a list of the principal flower shows in Great Britain, mostly exhibitions in Scotland. Messrs. Austin and McAslan inform us that the list will be sent free to those making application for it. *The Gardeners' Chronicle* revised list of fixtures for the year will be sent to readers on application, price 2s. 7d. post free.

Somerleyton Hall.—The beautiful grounds of Somerleyton Hall near Lowestoft will, as usual, be thrown open by Lord Somerleyton on Thursday afternoons during the summer commencing July 16. There will be the usual, charge for admission, in aid of local hospitals. The members of the public are always eager to avail themselves of this



MR. ALFRED W. WHITE,
The new President of the Chamber of Horticulture
(See p. 50).

opportunity to visit these magnificent grounds, the rendezvous of many professional as well as amateur horticulturists. There are ornamental gardens, lawns and shrubberies, with a winter garden adjoining the drawing room. There are also numerous glass houses and extensive orchards. Somerleyton Hall is a large and beautiful Elizabethan mansion, pleasantly situated in a well-wooded park of 400 acres, stocked with deer. The interior of the mansion is elaborately finished and most elegantly furnished.

Elstree Flower Show.—The Elstree and District Horticultural Society's exhibition, which takes place on the 18th inst., promises to be one of the most successful of the series, and visitors to the show will have an opportunity of inspecting the gardens at Aldenham Park. In addition to silver cups offered for Sweet Peas, Roses and vegetables, numerous valuable money prizes are offered in the several classes. Arrangements have been made for the accommodation of motors and the National Omnibus Company is extending the service of its cars to the entrance of the park and gardens.

Glasgow Flower Show.—The destruction of the Kelvin Hall by fire on Tuesday last has created a perplexing position for the Committees of the Scottish National Sweet Pea, Rose, and Carnation Society and the Glasgow and West of Scotland Horticultural

Society, as it has deprived them of accommodation for their respective exhibitions, the first of which was arranged for August 5 and 6, and the latter, on September 1 to 3. It was only last year on the occasion of the Provincial Show of the National Rose Society that the venue was shifted from St. Andrew's Halls to Kelvin Hall, but only part of the space in the larger hall was occupied. The problem for the Glasgow and the West of Scotland directors is not easily solved as there is not another building in the city capable of accommodating the exhibits at the September Show, which is again promoted in conjunction with the Glasgow Corporation. Emergency meetings have been called to discuss the position and the suggestion to hold this year's show under canvas seems to offer a practical way out of an unexpected difficulty. The last occasion on which the show was held in marquees at Bunhouse Grounds (now occupied by the ruins of Kelvin Hall) the Society had an unfavourable experience, as the ground was flooded by heavy rain, and, owing to the danger of the tents being blown down, the public was excluded for a time. Two of the sites available are the Queen's Park Recreation Grounds and Bellahouston Park, where the show of the Highland and Agricultural Society was held during the past week. Meanwhile, the Corporation has taken prompt action for the construction of a new hall, which it is expected will be ready for occupation by the end of the year. All the material to be used is to be of a fireproof character, the walls are to be raised six feet, and the cost is estimated at £100,000. The Sweet Pea and Rose Society has arranged to hold its show in St. Andrew's Halls, but nothing definite has been decided respecting the larger show in September.

R.H.S. Gardens Club.—By the kind invitation of the Hon. Vicary Gibbs, Aldenham House, Elstree, the members of the Royal Horticultural Society's Gardens' Club visited the gardens and pleasure grounds of that famous establishment on the 11th inst. Everything at Aldenham was in a thriving and attractive condition, notwithstanding the prolonged drought, and Mr. Edwin Beckett, the gardener, is to be complimented on the general condition of the gardens and pleasure grounds. The members of the Club were particularly impressed by the splendidly grown vegetables, both in the frame grounds and in the kitchen garden. The annual meeting for the election of officers, etc., was held in and around a summer house in the gardens, after which the large number of members returned to Wisley by char-a-banc, or elsewhere by train.

Report of the Hardy Fruit Crops.—Following our usual practice we hope to publish early in August statistical tables showing the condition of the hardy fruit crops in the United Kingdom. Some of those who have previously contributed to our report may have changed their addresses and we shall be pleased if these and any other readers especially concerned in fruit growing will make immediate application to the Editors for one of the forms.

Potato Purity Certificates.—Most Potato growers realise the importance of planting only true stocks of Potatoes in order to avoid the disappointment and loss which often result from the growing of impure seed. The demand for seed Potatoes from true stocks is consequently steadily increasing, and in order to assist farmers who grow Potatoes in England and Wales for seed purposes, the Ministry of Agriculture is making arrangements for the inspection of growing crops with a view to the issue of certificates that the crops are true to type and reasonably free from rogues. Definite identification of Potato varieties is only possible by means of a careful examination of the plants during a certain period of growth, and cannot be undertaken after the crop has died down. Growers who apply for inspection late in the season thus run the risk that their crops will be past the

stage when identification is possible before inspection can be carried out. Applications should, therefore, be sent to the Ministry so soon as possible, and in any case not later than the beginning of August. Inspections are made of all varieties of Potatoes, and the fee charged is at the rate of 2s. 6d. per acre.

Canadian Paeonies for Wembley.—The Canadian Pacific liner *Montreal* which arrived in the Clyde on Monday, July 6, landed five thousand Paeony blooms, which were conveyed to London in special refrigerator cars provided by the L.M.S. Railway Company. It was the intention to exhibit the flowers at the C.P.R. Pavilion at Wembley and afterwards distribute them among the lady visitors. The majority of the blooms were grown by Mr. W. Ormiston Roy, landscape gardener, Montreal, and the collection included such varieties as *Enchantress*, *La France*, *Sarah Bernhardt*, *Avalanche* and *Tourangeile*. During the voyage the flowers were specially attended to by Mr. F. Roy, brother of the grower, who expressed the opinion that this was the first time that cut flowers have been sent across the Atlantic on such an extensive scale.

Honour for Mr. James O'Brien, V.M.H.—The American Orchid Society, Boston, Massachusetts, has elected Mr. O'Brien, V.M.H., an honorary member of the Society on account of the distinguished services he has rendered in increasing the knowledge and improving the cultivation of Orchids. We take this opportunity of tendering our warmest congratulations to our friend and colleague, whose knowledge of horticulture is by no means restricted to Orchids. The many who enjoy Mr. O'Brien's friendship will realise that the honour is well merited, and will congratulate the Society on adding his name to their list of members.

Trials at Wisley.—The Royal Horticultural Society will carry out trials of *Nerines* and *Lachenalias* in their gardens at Wisley during the coming winter. Raisers and growers are invited to send three bulbs of each of their varieties to The Director, R.H.S. Gardens, Wisley, Ripley, Surrey, so as to reach him by Friday, July 31. A trial of Winter Spinach will also be held at Wisley during the coming winter. One packet of seed of each variety should be sent to reach the Director by Saturday, August 29.

Royal Horticultural Society's Gladiolus Show.—The special competitive classes for Gladioli in connection with the R.H.S. fortnightly meeting on Tuesday, August 25, number seventeen, and are divided into five sections. Two classes are open to all competitors and are for a collection of large-flowered Gladioli arranged on a space eight feet by three feet, and for a collection of the primulinus type arranged on a space of six feet by three feet. The other classes are open only to growers in the British Isles. On the same occasion, the Foremarke Challenge Cup, presented by Sir Francis Burdett, Bart., is offered for twenty spikes of named Gladioli in not fewer than ten varieties. The Secretary of the special Gladioli show is Mr. A. E. Amos, 10, Bergholt Road, Colchester, and entries must reach him by the first post on August 18.

Appointments for the Ensuing Week.—Tuesday, July 21: Winchester Horticultural Society's meeting. Wednesday, July 22: Yorkshire Agricultural Society's show at Bradford (3 days); Mitcham, Tooting, and District Horticultural Society's show. Thursday, July 23: Royal Botanic Society's meeting. Friday, July 24: Whitehall Horticultural Society's show at Bristol (2 days). Saturday, July 25: Falkirk Rose show; Springfield (Fife) Flower Show.

Gardeners' Chronicle Seventy-five Years Ago.—*Sale of the King of Holland's Plants.* We have before us the catalogue of the great sale of which, a week or two since, we

announced the approach. The late King of Holland's plants will be sold by auction at the Hague, on Thursday, the 22nd of August, and eight following days. It is evident from this catalogue, which by the way is a model for the imitation of others, that his Majesty gardened in a truly regal manner. Magnificent specimens of vegetation; plants capable of delighting the eye by their masses of flowers, or the sense of smell by their perfume, seem to have been the great objects of his care. Here we have beautiful Palm trees, noble Cycads and Plantains, crowds of Japanese Lilies, with forests of Oleanders, Camellias,

435, a Cinnamon tree, five-and-a-half yards high; 1104, the bell-shaped *Rhododendron* (*R. campanulatum*), two yards high and three yards wide; 1231, etc., plants of Camellias, three and four yards high and two yards wide; 2056, etc., Orange trees; are chiefly small specimens, none of them appear to exceed nine feet, and the majority are from three to four feet. *Gard. Chron.*, July 20, 1850.

Publications Received.—*America's Greatest Garden: The Arnold Arboretum.* By E. H. Wilson. The Stratford Co., 234, Boylston Street, Boston 9, Massachusetts. *Variation*



FIG. 18.—ROSE SCARLET GLORY.

N.R.S. Certificate of Merit, July 3. An orange-scarlet H.T. variety (see p. 36).

Chinese Azaleas, Indian *Rhododendrons* and Orange trees. Although we must necessarily refer the reader to the catalogue itself for the particulars of this remarkable sale, we must spare room to mention a few of the lots. Lot 33 is a Black Cane (*Calamus niger*) four yards high, described as a magnificent specimen with several stems; 48 to 62 are Palmettos (*Chamaerops humilis*) varying in height from one to four yards, said to be of admirable beauty, and in some cases without rivals; there are also many more lots of the same kind; 124 to 127 are specimens of the Bourbon *Latania*, from two to three yards high; 412, *Strelitzia augusta*, five yards high;

among the *Sporelings* of a fertile sport of the Boston Fern. By Ralph C. Benedict. Reprinted from the *Journal of Heredity*, September and October, 1924. Brooklyn Institute of Arts and Sciences, Brooklyn Botanic Garden, New York. *A Handbook of Hardy Fruits: Stone and Bush Fruits, Nuts, etc.* By Edward A. Bunyard. John Murray, Albemarle Street, W. Price 10s. 6d. net. *A Class Book of Botany.* By Ernest Stenhouse. Macmillan and Co., Ltd., St. Martin's Street, W.C. Price 7s. 6d. *The Anthocyanin Pigments of Plants.* By Muriel Wheldale Onslow. Second Edition. Cambridge University Press, Fetter Lane, E.C.4. Price 21s. net.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to, SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Deciduous Calanthes.—The present is a very interesting season with all cultivators and lovers of Orchids, as many of the plants are flowering while others are making their new growths, including the deciduous *Calanthes* of the *Veitchii* and *vestita* section. The plants are being greatly benefited by the hot, sunny weather, and are growing vigorously; well-rooted specimens need a plentiful supply of water, but very great care must be exercised in applying moisture to any that are not well-established, or the young leaves may become spotted. Plants that have well filled their pots with roots may be afforded occasional applications of weak, liquid manure. Do not use the stimulant at too great a strength at first; one part to three parts of water will suffice for the first few applications. The amount may be slightly increased as the plants develop. Many young roots appear on the surface of the compost at this season, and where sufficient space has been provided for the purpose a thin layer of fibrous loam may be placed lightly over them. The plants will root quickly into this material, and it will be of great benefit to them. Arrange the plants so that each young growth obtains all the light and air available, which will necessitate staging them near the roof-glass.

Pleiones.—These Orchids are commonly known as Indian Crocuses; they are in full growth, and specimens that are strong and well-rooted should be supplied liberally with water at the roots, supplemented by occasional applications of weak, liquid manure made from cow-dung. This treatment should be maintained until the foliage begins to show signs of maturity, when the use of the liquid manure should be discontinued and the supply of moisture withheld gradually as the leaves begin to fall. *Pleiones* usually grow best when suspended near to the roof-glass in a light, airy position in the *Cattleya* or *Intermediate* house.

Thunias.—As these attractive Orchids pass out of flower they should be removed to a cool, well-ventilated greenhouse and exposed to uninterrupted sunshine. By this treatment they will ripen and consolidate their growths. The plants should still be afforded moisture at the roots each time the soil becomes dry, and so long as the leaves remain green, but when the latter commence to change colour water should be gradually withheld. Under these dry conditions the plants are subject to attacks of red-spider, which may be kept in check by placing the pots on their sides at intervals and syringing the foliage with warm, soapy water.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Herbaceous Borders.—Many of the earlier-flowering subjects are now passing out of flower and growths which have finished should be removed in order that the borders may be kept tidy. In many cases, also, secondary growths will develop which, under favourable conditions, may give a further display later in the year. Attend to the staking and tying of later flowering subjects using strong, square stakes for the robust growing plants at the back of the borders. See that there is no crowding of growths and, if earlier thinning has not been suffi-

cient, reduce the number of growths again until each one has ample room to develop fully. Old, established clumps suffer quickly in periods of dry weather and copious waterings should be given them followed by a mulch of short manure if the latter is available.

Vases, Baskets, etc.—Specimen plants growing in vases and baskets will require an occasional regulation of the growths. Remove all decaying leaves and fading flowers and, when trailing plants have covered the surface intended for them, they may be pinched to induce the plants to break and produce a profusion of flowers from the space furnished. Vases and tubs stood on terraces in open positions will need abundance of water and when the roots have permeated the whole bulk of soil an occasional dose of liquid manure or a sprinkling of guano will help to maintain vigour in the plants.

Budding.—Where stocks have been planted for the budding of *Roses* or other flowering shrubs the work may be done during the present month. The bark generally moves readily after a good rain fall, when the operation may be carried out easily and quickly and success is assured. Much depends on the vigour of the stock and the nature of the soil and if, on trial, it is found that the sap is not flowing freely enough to enable the operator to carry out clean work it is wise to wait until better conditions prevail.

Border Carnations.—The layering of these plants should be taken in hand so soon as the growths are sufficiently long. Clean the leaves from the bases of the growths to be layered, use a sharp knife for making the tongue and peg the shoot firmly into fine prepared soil which has been laid round the plants for the purpose. Water the plants thoroughly on completing the work and keep them watered during dry weather.

Dahlias.—These plants are now making rapid growth and will need frequent attention in the matter of tying. See that the stakes are sufficiently strong to support the plants and thin the growths where necessary. Earwigs are frequently troublesome when the flowers are developing and traps consisting of small pots filled with hay or portions of Bean stalks should be laid near the plants from which the insects may be collected and destroyed every morning.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Souvenir de la Malmaison Carnations.—The layering of these Carnations should be undertaken so soon as convenient after the plants have passed out of flower. One-year-old plants, if they are strong and healthy, provide the best material for propagation, and it will be well to select from amongst these a sufficient number of each of the varieties grown for the purpose of potting on, to meet the requirements of the establishment next year. These Carnations give the best returns in their second year, hence it is obvious that the best plants should be selected now for growing on. These may be placed in a cold frame to harden their growths, and be afforded careful attention in watering, and gentle feeding if necessary, to keep them healthy and unchecked against the time when it will be convenient to transfer them to larger pots. It is equally important that the plants selected for layering should be healthy and strong, so that if the final choice from the young plants falls short of the required number these may be made up from the best of the two-years-old plants.

Layering.—A cold frame or pit with movable lights, in which the plants may be layered, should be prepared by placing

therein a bed of sandy loam to a depth of some five-inches or six-inches. The plants should be turned out of their pots one by one, planted firmly in the bed, making sure beforehand that the balls of soil are not in the least dry, and layering each plant in turn before planting the next one, thus economising the space available. The weakest growths should be cut away, leaving those only which can be properly manipulated and be afforded sufficient room for development. The lower leaves should be carefully removed from each growth up to one or two pairs above the point of incision of the stem. This should be made in an upward direction, on the under side of the growth, starting at a point just above one leaf-node and continuing just through the next; the cut, when completed, should half sever the stem. If less than this, root formation may not take place, whilst a larger cut may result in the loss of the growth. A knife with a clean, sharp edge should be used. Each growth should be pegged down securely at a point immediately below the incision, pressing the soil carefully about and under the growths in a manner that will ensure the "cut" being left open, and the stem covered with from one-inch to two-inches of soil. As the work proceeds, water and shade the plants, and when completed, keep the frame rather close and shaded, syringing the plants overhead twice or thrice daily until the rooting of the layers has taken place.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Budding Fruit Trees.—Where the grafts that were inserted in the spring have failed buds should be inserted on the stocks, which are now in a fit condition for the operation, and buds may be inserted on stocks that were not suitable for grafting. Before commencing the work see that the stock is in a proper condition to receive the bud, and remove the clay put over the graft. The sap should run freely. After the bud is placed in position tie it tightly with wet bast to exclude the air from the wound. Select dull weather for the operation. In hot weather keep the bast and bud moist for the first week or ten days by syringing them in the evening: by that time the bud and stock will have united sufficiently to need no further moistening.

Gooseberry Bushes.—When the fruits have been gathered the bushes should be given a thorough cleansing. Spray them with a specific to destroy any sawflies that have escaped the spraying earlier in the season. Follow this spraying with an application of Bordeaux mixture as a preventive of American mildew. Bushes carrying fruits intended for dessert may be treated in the same manner after the berries are harvested.

Raspberries.—So soon as the fruits are all gathered the old canes should be cut away, taken to the fire heap, and burned. Select the best placed and strongest of the young canes for next year's crop; the canes should be tied in carefully and not too tightly. Remove all the surplus canes to allow plenty of light and air to reach those that are retained. If the ground is dry remove the old mulching material, give the soil a heavy watering, then replace the litter, adding an additional supply of manure.

Apples and Pears.—The thinning of these fruits should be completed by now. It will be necessary to keep an eye on any fruits that are covered by the foliage, in which case some of the leaves will need to be cut away to expose the fruits to sunlight, which is necessary to develop rich colour in many varieties. The Apple crop seems to be the most satisfactory of all the hardy top fruits.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Cucumbers.—During periods of bright sunshine Cucumber plants are apt to get infected with red spider; therefore it is advisable to make frequent sowings to meet the demand for young, fresh fruits. Sow sufficient seeds in three-inch pots as advised for previous batches, place the seedlings in six-inch pots when they are large enough, and later plant them out in prepared beds, using plenty of leaves in the bottom and a good mixture of manure and loam to make the ridges and mounds. Maintain a moist atmosphere, and regulate the growths to furnish the trellis; do not stop the young plants until they are well in bearing. Plants growing in frames will require constant attention in thinning the growths and removing the old foliage; afford them a plentiful supply of water and weak, liquid manure on three occasions each week. Medium-sized, fresh fruits are to be preferred for the table.

Tomatoes.—To maintain a continual supply of Tomatoes throughout the winter a liberal sowing of a well-tried variety should be made now. To obtain the best results an early start must be made, to enable the plants to make good, strong growth and set their first trusses before the days shorten. They should be grown in a light, airy, span-roofed house that is well heated. Admit plenty of air on all suitable occasions and water the roots very carefully. Guard against over-cropping. Should white-fly attack the plants fumigate the house on three or four occasions, missing one night between each operation; see that the house and floors are dry before lighting the lamps. Should mildew or red-spider appear, dust the plants with green flowers of sulphur. Keep the fruits picked from the plants in bearing before they become thoroughly ripe, and keep all side shoots and any yellow foliage rigorously picked off. Stop the plants when they reach the top of the house. It will conserve the energies of the plants if the fruits are picked before they are fully ripe; their ripening may be completed in a warm house.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE,
Polesden Lacy, Dorking.

Cabbage.—It is a good plan to make a small sowing of Cabbage in order to obtain a good bed for furnishing supplies as early in spring as possible. The sowing for the main supplies will be better deferred until well into next month. There are many varieties to choose from for this early sowing; a little seed of each of the following sorts may be used: April, Ellam's Early and Flower of Spring. If there is a demand for a smaller hearting variety, a few rows of Harbinger should be sown. Keep a sharp watch for slugs so soon as the seedlings appear and use wood ash and old soot as a deterrent. If small birds become troublesome, cover the seed-bed with a fine mesh net. Watering may be necessary and must not be neglected, for plants starved in the seed-bed are never so successful as those that grow freely without a check.

Autumn-sown Onions.—From this date until the end of the present month is a good time to lift the crop of autumn-sown Onions. Use all thick-necked bulbs for present supplies as it is useless to attempt to store these for long. All the other bulbs should be laid out thinly in as sunny a position as possible to get them thoroughly ripened. If the weather is inclined to be wet or showery the bulbs should be spread over a staging or trellis in a light, airy greenhouse. There are not many varieties of

autumn-sown Onions that will keep sound and solid for any great length of time, but on one notable exception that can be relied on is Autumn Queen.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE,
Lowther Castle, Penrith, Westmoreland.

Yew and Box.—Hedges formed of these evergreens may now be clipped. This season growth is much earlier than last year and already terminal buds are to be seen; growth is

Souvenir de la Malmaison Carnations.

The present is a suitable time to secure layers from the older plants as they pass out of flower. Select the cleanest and healthiest plants for this purpose. An empty frame possessing a good bed of friable soil will be found excellent for layering "Malmaisons." The layers, while rooting, must at no time be allowed to become dry. Afford shade from direct sun and maintain a current of air in the frame. When the layers are sufficiently rooted they may be severed from the parent plant and in a few days potted into three-inch or three-and-a-half-inch pots.

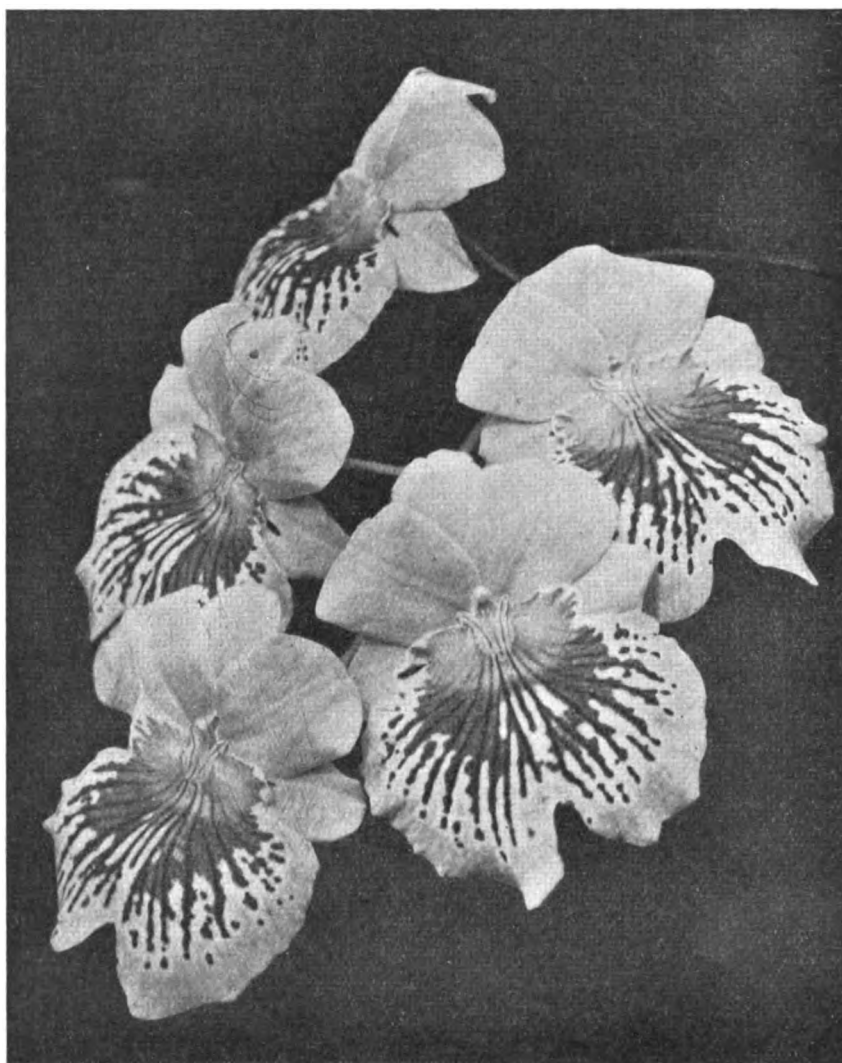


FIG. 19.—MILTONIA VENUS VAR. FASCINATOR.

(see page 46).

also shorter possibly due to the drought experienced in June. Topiary subjects composed of Yew and Box that may be in the process of formation or mature should have any supports that are necessary to them examined and renewed before the shrubs are trimmed.

Roses.—All spent Rose blooms should be gathered ere they fall and litter the ground. The young growths of all climbing varieties, which are now growing freely, need to be supported ere they become long enough to suffer damage from wind, etc. Suckers will still continue to appear and should be removed at once. Keep the hoe at work between the plants in beds and, if apparent, arrest any attacks of mildew and aphid in an early stage.

Cucumbers.—The Cucumber plants in frames are growing fast and require attention in pinching the shoots and top-dressing the roots. A handful of artificial manure mixed with a sufficient quantity of good loam and well decayed leaf-mould will form excellent material for top-dressing and will at once encourage surface rooting. When watering these plants always thoroughly saturate the bed.

Broccoli.—Plants of Broccoli intended for furnishing winter supplies require attention. Plants pricked out will require frequent waterings. Move others that may be ready to their permanent quarters. Varieties that form heads after Christmas should not be planted in excessively rich soil, for the plants will withstand sharp frosts better on moderately poor land.

NOTES FROM EDINBURGH.

APPROACHING the pond in the Royal Botanic Garden, Edinburgh, the lavish display of the flowers of *Mimulus luteus* attracts attention, but it is not long before the visitor realises that they do not constitute the whole glory of the pond-side. Besides the *Mimulus* are hosts of *Primulas*, well illustrating the value of these fine plants for waterside gardening. The most dazzling display is made by groups of *Primula Bulleyana* hybrids, the shades of colour represented being very beautiful. Species, too, make some contribution to the general effect, for the yellow *P. helodoxa* is present, as well as a large group of *P. muscarioides* and the beautiful *P. Littoniana*. Stretching out from the banks and forming white sheets are the flowers of *Ranunculus fragilis*, while the Willows on the east side constitute another source of beauty.

In the *Rhododendron* border are more *Primulas*. There is a large group of *P. pseudosikkimensis*, with big heads of pale yellow flowers at the end of stout, mealy stems. A group of this species in the Rose garden is rather interesting as it contains a plant with a fasciated flower stalk. Several stems have joined together to form one thick stem, flattened at the sides, with a large head of flowers at the top. In another group in the *Rhododendron* border the deep pink flowers of *Primula burmanica*, a Burmese species, are attractive, while there is also a group of *P. Bulleyana* itself. *P. anisodora* is a native of Western Yunnan, and possesses long, slender stems bearing whorls of drooping, dark red almost black, flowers, but although they are not very conspicuous they are nevertheless interesting, and the species is deserving of cultivation. Another species with drooping flowers is *P. lanceolata*, but their colour is of a rich purplish pink. Two other decorative species are *P. lichiangensis* and *P. Veitchii*, both bearing pink flowers.

Among the *Rhododendrons* in this part of the garden there are four worthy of mention. One is the hybrid *R. Gowerianum*, with pink flowers, produced at a time when the *Rhododendron* display is all but over. But even more notable are the reddish-yellow, drooping flowers of *R. cinnabarinum*, a species whose merit as a garden plant rests not only on the ornamental character of its flowers, but also on the beauty of the young foliage which follows them. This is of a fine grey colour, and suggests a two-fold value of the *Rhododendrons*. Their beauty of leaf in autumn is recognised in the case of the *Azaleas*, but now we have it in the evergreen members of the genus in spring. Point may be given to these remarks by drawing attention to another plant, *R. campanulatum eruginosum*, which is represented by a large group. The bluish-grey wax on the young foliage is quite distinctive, and the group produces a very fine effect. *R. Thomsonii* is another plant which is valuable in this connection.

Among the shrubs attention is drawn to the arching branches of *Buddleia alternifolia*, now studded with purple flowers. In the rock garden the white flowers of *Pernettya mucronata* are noticeable, and a quite flourishing group of *Tricuspidaria lanceolata* demonstrates the beauty of this shrub, which has dark green leaves that serve as an admirable background to the red flowers. *Olearia ilicifolia*, a native of New Zealand, has opened its Daisy-like flowers, and, close by, the graceful *Spiraea Henryi*, a Chinese species, is also noticeable. *Senecio laxifolius* is another New Zealand plant which is valuable for its grey foliage, and also just now for the yellow flowers it produces in profusion.

In one part of the rock garden the visitor cannot fail to notice the prolific seeding of *Meconopsis latifolia*, for seedlings appear freely in the most unlikely places, and as a consequence the pale blue flowers of this species are still in evidence. Another interesting plant is *Gazania splendens*, with rich orange flowers; although it has already produced a good

display there are many more flowers to open. In the valley, *Rodgersia aesculifolia* is a handsome plant, with large leaves and a large head of exceedingly decorative flowers. On the outskirts of the garden there is a group of *Delphinium nudicaule*, a very pretty little species with red flowers. These are but a few of the more interesting plants in flower, for the bulk of the display in the rock garden is afforded by innumerable *Campanulas* and *Dianthi*. By the houses, however, there is one *Dianthus* worth mentioning, and that is *D. cinnabarinus*, a native of Greece, and its specific name is intended to describe the colour of its flowers, which are poised on long, dainty stems.

A very fine display has been made by the *Libertias*, a genus of *Iridaceae*. Three species are said to be in cultivation, and of these *Libertia grandiflora* is the best. It is a native of New Zealand, and produces a quantity of white flowers, which are very decorative. The *Libertias* are not quite hardy, and although they may be grown all the year round in the open, they appreciate a little shelter during the winter. Along the herbaceous border there are two giant representatives of the *Umbelliferae*. In *Heraclium asperum* and *H. villosum*. These species, both natives of the Caucasus, attain a height of between six feet and seven feet, producing large heads of white flowers. They are, however, more curious than ornamental on account of the coarseness of the foliage and the dirty white colour of the flowers. Robert H. Jeffers.

ORCHID NOTES AND GLEANINGS.

MILTONIA VEXILLARIA AND ITS HYBRIDS.

Few plants can excel the delightful *Miltonia vexillaria*, with its numerous hybrids, for giving a display of flowers during the months of May, June, and even July, to be followed again with the autumn-flowering varieties, *M. v. rubella*, *M. v. superba*, *M. v. Leopoldii*, and some late-flowering hybrids.

Although these late-flowering sorts are poor compared with the summer-flowering varieties, no doubt in due time they will be improved by crossing them with others.

In this most useful group we have another instance of how one distinct variety in the hands of the hybridist can impart its own particular peculiarity to its offspring, and make an almost new race of plants. I allude particularly to *M. v. Memoria G. D. Owen*, which has imparted its dark mask, or blotch in the lip to so many of our modern hybrids. This is most pronounced in *M. Charlesworthii*, *M. Sanderæ*, *M. Lyoth*, *M. Memoria Baron Schröder*, *M. Westminster*, and many of the later-raised varieties of *M. Bleuana*, also in the variety *Rajah*, recently figured in *The Gardeners' Chronicle*.

While this mask is found in a smaller degree in *M. v. chelsiensis*, *M. v. superba*, *M. v. Leopoldii*, not much progress was made in this respect until seedlings of *M. v. Memoria G. D. Owen* were flowered, when some even excelled that lovely Orchid. Compared with the original species the progeny of these crosses give results that even the most sanguine could not have anticipated.

Another useful and beautiful hybrid derived from *M. Phalaenopsis* and *M. vexillaria* is *M. Venus*, which deserves a place in any collection of these useful plants. The beautiful form of this Orchid known as *M. Venus*, variety *Fascinator*, is illustrated in Fig. 19. *M. Bleuana*, the first hybrid in which *M. vexillaria* was a parent, was raised so far back as 1889 and is one of the most delightful Orchids known, not only having beautiful flowers, but also a most delicate perfume. It was raised from *M. Roezlii* and *M. vexillaria*, and the cross has been repeated many

times over, hence the many very fine varieties of *M. Bleuana* in existence.

The variability in colour, however, is one of the greatest excellencies of *M. vexillaria*, but this is even more pronounced in the hybrids. There is also some difference in the manner of growth of the different hybrids, according to the parents used, some being more robust than others. It is an interesting study to all interested in plant breeding, how in many cases from delicate parents, a robust and free-growing race of plants may be raised.

Miltonias are not adapted for cut flower purposes but it is astonishing how long the flowers will last in a fresh condition on the plants, and it is not detrimental to the specimens to use them indoors provided they are not allowed to remain there too long.

The cultivation of these *Miltonias* is much better understood than formerly, and provided a few simple rules are carried out they offer no difficulties. The plants require a temperature of 55° to 65° the whole year round, although some of the hybrids require slightly more warmth than others. *M. Bleuana* should be grown at the warmer end of the house, owing to the influence of *M. Roezlii*, which delights in heat.

The whole of the plants are shade-loving as their thin, papery leaves are not capable of withstanding strong sunshine. They also delight in a moist atmosphere at all seasons, as in a dry atmosphere thrips will soon disfigure the foliage and cause a general decline in the plants. As many of the different varieties in addition to hybrids will have passed out of bloom, they should be removed to a cool house, as the result of too much heat is weak thin foliage which will develop spot disease and go off at the points. At all seasons the plants require liberal supplies of moisture.

When *Miltonias* have made considerable growth from the base of the last completed pseudo-bulbs and the new growth commences to make new roots, is the proper time to repot them; or better still, this condition should be anticipated by a few days.

As regards a rooting-medium, *Miltonias* require a clean, open material, which their thin, soft roots can easily penetrate, and a suitable compost is made up of peat, A.I fibre, *Osmunda* fibre, and *Sphagnum*-moss in equal parts, to which a small portion of half-decayed Oak or Beech leaves may be added. If at all dry the compost should be moistened before using it and be placed in the receptacles moderately firmly. It is advisable to remove all the old rootless and leafless pseudo-bulbs when repotting.

Repotting the different varieties should be done at different times as they become ready, so that they receive the slightest check possible.

Early in August is a good time to commence the operation of repotting the varieties which flower during the summer months, whilst those which flower during the autumn are best potted in February or early in March. Being surface-rooting plants they are best grown in pans, which should be well drained and not too large, as overpotting is detrimental to their future welfare.

Cleanliness must be observed at all times, and upon the first signs of thrip and other insect pests, fumigation with some safe specific should be done at once.

Miltonia vexillaria has been crossed with *Cochlidia*, giving us the *Miltoniodas*, while some of its progeny such as *M. Bleuana* have been crossed with *Odontoglossum*, making *Odontonia*. J. T. B.

DENDROBIUM BRYMERIANUM HISTRIONICUM.

The original type of *Dendrobium Brymerianum* has flowered in many gardens this year, and the plants shown have, in some cases,

borne their richly-coloured, yellow flowers with large labellums, having unusually long, branched fringing, which good cultivation seems to have the power of developing in an extraordinary degree. The presence of these handsome forms suggest that reference should be made to the variety *histrionicum* which was described and fully commented on by the late Prof. Reichenbach in *The Gardeners' Chronicle*, January 28, 1888, p. 104.

The main differences from the type, in its best form, are that the flowers of the latter are smaller, the lip fringed or slightly fringed, and in its native habitat (Bhamo) constantly self-fertilised. I had received plants of the variety alluded to and the characters mentioned were confirmed by the large number of seed capsules borne by them. Examination of the contents of the capsules, however, failed to show good seeds, and on

purplish blotches at the bases of the segments. It is one of the desirable, rare species that Orchid growers and hybridists should consider now that this section of *Miltonia* is so magnificently grown and wonderfully utilised by the hybridist. Its use would bring a new factor in development. It was first imported by Messrs. James Veitch and Sons, and flowered in 1875, but little was seen of it for some years. Later, Richard Pfau sent a small lot from Costa Rica, and plants flowered with the late Sir Trevor Lawrence and Baron Schröder. In March, 1898, Mr. H. H. Bolton, Height Side, Newchurch, and Mr. Elijah Ashworth, showed good specimens of *M. Endresii*, and, in 1911, Mr. J. Birchenall, of Alderley Edge, showed this *Oreoid* at Manchester, and it was found in that area even more recently, and it is to be hoped still exists in some of the gardens.

mend a study of the "Comparative Table of British *Dactylorchis*" and accompanying notes by M. J. Godfrey, T. Stephenson and T. A. Stephenson in the *Journal of Botany*, Vol. LXII, No. 738, June 1924.

Every year, towards the middle of June and extending into July, groups of the commoner species of *Orchis* (Fig. 20) are a feature of the rock garden here. These include natives as well as others, the former demonstrating the fact that many of our native plants are well worth cultivating.

O. elata is by far the handsomest of the moisture-loving species growing at Glasnevin. Specimens over three-feet high, with spikes of flowers ten-inches long are produced every year, the large deep purple flowers being very beautiful. With very much the aspect of an exceptionally vigorous *O. latifolia*, the true name of this plant has been much discussed. Specimens have lately been sent



FIG. 20.—HARDY ORCHISES AT GLASNEVIN BOTANIC GARDEN.

Left, *Orchis foliosa*; centre, *O. maculata* var. *immaculata* (*O. O'Kellyi*); right *O. maculata* var. *rosea*.

blooming the plants only produced occasional self-fertilised flowers.

I had the same experience with the Himalayan *Eria clausa*, which had, on imported plants, self-fertilised flowers on the greater part of the spike, but always one or two unfertilised flowers. The cultivated plants gave, generally, perfect flowers, unfertilised. Much has been written about the self-fertilisation of Orchids in a wild state, but the question is whether in many cases the term self-pollinated would not be more correct. It seems likely that the operation may be to put superabundant flowers out of action and leave enough perfect, with their odour and nectar undisturbed, to attract the insects for the more natural operation. It would be interesting to know how the variety *histrionicum* behaves in the gardens of those who possess it. J. O'B.

MILTONIA ENDRESII.

This delicately-beautiful *Miltonia* is about intermediate between *M. vexillaria* and *M. Roezlii*, with the habit of *M. vexillaria*, and bears silver-white flowers with small,

HARDY ORCHISES.

HARDY Orchids as a class are attracting more attention than formerly and, with a better knowledge of their cultural requirements, it is not too much to expect that they may yet enjoy as great or a greater vogue than their more gorgeous congeners of tropical climes. The possibility of growing most of them in the open air, or, even in an unheated greenhouse, brings them within the means of many who are debarred from growing Orchids needing artificial heat.

One genus of merit is *Orchis*, including perhaps a score of species and several varieties, all of which with a little care could be grown in the open. A good deal of botanical literature has appeared recently dealing with the British species of *Orchis*, but I have not been able to follow exactly which of the native species are included under the specific names *praetermissa*, *purpurella*, *elodes*, or *ericetorum*. To those who may be interested in the botanical distinctions between these species, and their relation to the better known names, I recom-

to Dr. Stephenson, a recognised authority, and the definite determination of the species may safely be left to him.

O. foliosa, the well-known Madeira Orchid, is one of the finest species and never fails to provide a charming display at this season. It is a vigorous plant reaching a height of two-and-a-half-feet or more, when doing well, producing ample leaves up to one-foot long and three-inches wide, surmounted by a handsome spike of bright purple flowers. *O. foliosa* × *maculata* has been recorded but is not common, and I am unable to say where it can be obtained.

O. globosa is a species from the sub-alpine regions of Europe, producing a leafy stem twelve to eighteen inches high, leaves narrow and unspotted, flowers rose or lilac, small, with a three-lobed lip and short spur, borne in a somewhat globular spike.

O. hircina, the Lizard Orchid, is a native species but confined to a few localities in southern England. It is more of botanical than horticultural interest, lacking the bright colour admired in a garden plant. The leafy stem grows a foot or more in height, bearing a dense spike of greenish-white flowers

remarkable for the long narrow lips. Although not a brilliant plant it is worth trying to establish a small colony of this species in the rock garden. Being scarce, native specimens should not be dug up, but it is occasionally offered by continental nurserymen.

O. incarnata, another native species inhabiting wet situations, is to be recommended for cultivation in wet bogs and damp pockets at the base of the rockwork. The leaves are unspotted, and the flowers, which vary from pink through rose purple to yellow, and even white, are produced in a dense spike, the lower bracts longer than the flower. This species flowers earlier than the other marsh Orchis, but M. Correvon records finding a yellow form (*O. incarnata ochroleuca*) which flowers a fortnight later than the type. A collection of these colour forms would make an interesting feature in our gardens.

O. latifolia is a fairly common native and in its finest forms one of the best of garden plants. The leaves may be spotted or not; they are comparatively large, less fleshy than those of *O. incarnata* and are broader in the middle. The stem may reach a height of two-feet, bearing a flower spike of six to nine-inches long when well grown; the flowers are often of a fine deep purple-violet but sometimes paler. *O. latifolia* occurs wild round the margins of the pond at Glasnevin, but where it comes in contact with the bogs specially prepared for other moisture-loving plants it increases enormously in size and vigour, rivaling *O. elata* in stature and fine colour.

O. laxiflora is a South European species recorded also from the Channel Isles. It, too, is a moisture lover, but will flourish under drier conditions than *O. latifolia*. The leaves are green, narrowly lanceolate; the flowers large, red or carmine, borne in a long, loose spike. The flowers appear in May and are thus nearly over by the time *O. latifolia* is in bloom.

O. maculata, the so-called Spotted Orchis, is one of the commoner native species. Smaller in all its parts than *O. latifolia* it is, nevertheless, one of the most attractive species when cultivated. Normally the leaves are lanceolate, except the lowest, which is often oval, and marked with brown spots; forms are also found with unspotted leaves. Typically the flowers are pale pink, borne in a compact spike, some three to four inches long. Another form cultivated here as *O. maculata rosea* has spotted leaves, and flowers with a ground colour of pink, heavily veined with reddish purple. *O. maculata immaculata* I take to be the *O. O'Kellyi* of Druce; in this the leaves are unspotted and the flowers pure white; a beautiful plant but only an albino of *maculata*.

O. mascula, the Early Purple Orchis, is a fairly common native and one of the first to appear in spring. The leaves are generally broader than those of *O. maculata* and may be spotted or not. The flowers vary in colour from purplish pink to flesh coloured and are borne in a loose spike terminating a stem of twelve to eighteen inches.

O. militaris is a rather fine, early flowering species, producing many flowers in an oblong spike; colour carmine-rose, leaves oval to oblong and unspotted.

O. Morio, the Green-winged Orchis, is found in the South of England and Ireland. It is less striking than some of the species mentioned, but has a great deal of quiet beauty and interest; the flowers are few, borne in a loose spike; sepals reddish, arching over in the form of a helmet; the lip is long, three-lobed, pink to purple. It is not desirable to dig up these rare natives, but one catalogue before me offers this species at 9d. each, probably imported from the continent, where it is commoner.

Other species occasionally offered and worth cultivating are *O. papilionacea*, the Butterfly Orchis, with handsome flowers, rose-red in colour, borne in a few-flowered spike, surmounting short, lanceolate leaves;

O. sambucina, a useful and ornamental species giving several colour varieties, notably yellow and reddish-purple; *O. Simia*, a species inhabiting the hilly regions of Central Europe and Asia Minor, with oblong leaves, and producing a compact spike of flowers, rose-coloured and spotted with carmine; *O. ustulata*, a tiny species found in several parts of England. It produces few leaves and a short spike bearing flowers with purple sepals and a white lip.

O. pyramidalis, sometimes placed in the genus *Anacamptis*, is common in meadows, and a plant of much beauty. The flowers are produced in a compact, pyramidal spike, and are rich, rose-coloured; the leaves are lanceolate. In flower the height may total twelve to eighteen inches.

Regarding cultivation, all the moisture lovers, such as *O. elata*, *O. latifolia*, *O. maculata*, and *O. foliosa*, flourish in wet bogs where *Primulas*, *Astilbes*, and *Rodgersias* are at home. The others, despite the fact that many of them are described as natives of calcareous soils, do best in the smaller, drier bogs of the rock-garden and among *Rhododendrons* where the soil is a mixture of mountain loam and peat. Even *O. pyramidalis*, which grows naturally in calcareous soil, becomes far finer when lifted from the meadows and planted in *Rhododendron* soil. I believe it is all a question of moisture. J. W. Besant, Glasnevin.

ALPINE GARDEN.

CHEIRANTHUS MUTABILIS.

THE other day, when visiting a delightful garden, that of Mr. C. W. Ralston, at Dabton, Dumfriesshire, I was glad to observe a great number of plants of one of the dwarf Wallflowers which are known by the name of *Cheiranthus mutabilis*. It is rather difficult to clear up some confusion which has arisen regarding the names of the plants which have the appellation of *mutabilis*. The one at Dabton is the taller and lighter coloured of the two generally bearing the name. The other, which I think is the one which the late Mr. Farrar said, erroneously, I am certain, "was raised by Miss King," is scarce, but is a fairly old plant in gardens. I have not this at present, but had it for some years and it is, or was, lately at Monreith. The latter form (or distinct species or variety) is dwarfer and much deeper in colour, having less of yellow than that at Dabton. It is apparently the variety sold as *C. mutabilis purpurea*, but other names for the two are *C. versicolor* and *C. v. purpurea*. Speaking broadly, both of these are perennial but, like most of the race, they are not absolutely reliable and should be propagated by cuttings occasionally to retain a stock, and young plants are not so leggy and bare on the stems. Both are quite attractive, though not showy, having wonderful combinations of yellow, or buff, mahogany-brown and crimson, changing and gradually growing deeper in colour. The variety sold as *purpurea* is more trailing and dwarfer, and is about six inches in height, the other being sometimes, though not frequently, so much as a foot high. S. Arnott.

PRIMULA SUFFRUTESCENS.

THIS Rocky Mountain *Primula* has not been an easy plant, two wet summers and "muggy" winters causing it to die off in patches. With a little protection, however, and a thoroughly well-drained gritty soil it has done tolerably well, and the abundant sunshine and heat of last June brought it into flower.

P. suffrutescens is described as a shrub and it qualifies for that distinction by making trailing, woody branches, upon which are produced tufts of oar-shaped, fleshy, green leaves, the ends of which are bluntly toothed.

In summer, flower stems spring from these loose rosettes to three or four inches high and bear a cluster of half-a-dozen or so rosy-pink flowers with a yellow eye, which at once reminds one of the delightful *P. rosea*. *P. suffrutescens* is undeniably frost-proof, and in some gardens it is reported as being quite an easy subject, but it is still rare.

FELICIA ABYSSINICA.

THOUGH it cannot be considered hardy, this pretty rock-plant has proved fairly permanent with us in a very dry, stony soil. Wet winters appear to be a greater danger to it than frost, for whilst the former may mean its complete disappearance, the latter, unless very severe, leaves the root uninjured and this freely breaks away in spring.

F. abyssinica is a little sub-shrubby plant up to some twelve inches in height and as much in diameter. Its fresh green, linear leaves densely crowd the little branches, and above the tips of the latter, in full summer, the dainty flowers are held on slender stems each like a finely-rayed Daisy in a pale, soft lilac. As *F. abyssinica* strikes readily in the later summer it is always a simple matter to winter a potful of cuttings in a cold frame and these will flower the following season. In addition to a really well-drained, gritty soil the plant should have full exposure to sun. J.

TREES AND SHRUBS.

COTONEASTER.

THE *Cotoneasters* constitute an important genus of small trees and low shrubs, greatly prized for their brilliant fruits, which are freely produced and, in many cases, persist during the winter. There are about twenty species, and nearly all possess some garden value, and some have it to a very prominent degree.

C. acuminata, sometimes known as *Mespilus acuminata*, is a deciduous species, attaining to a height of from twelve-feet to fourteen-feet, introduced from Nepal in 1820. Its flowers are produced in April and May, and are succeeded by attractive, scarlet fruits.

C. buxifolia is synonymous with *C. Wheeleri*, and produces its rather large, white flowers in April; the leaves are evergreen, and woolly on the undersides. This is not one of the most attractive species; it was first sent home from the Neilgherry Hills in 1824. This shrub grows about four-feet high.

C. bacillaris is not greatly ornamental, but is notable for its hard wood, which is greatly favoured for the making of walking sticks and similar articles; it is a native of Nepal.

C. horizontalis is a magnificent shrub of low-spreading growth; it is most attractive when sprawling over a large rock, albeit it is an excellent wall plant. The small, closely-set leaves and crowds of reddish-crimson fruits go to form a very attractive picture; a large bed of this plant is a fine lawn ornament.

C. frigida is a tree reaching a height of ten feet or twelve feet and of rather straggling growth; it is sub-evergreen, and flowers in April and May, while its bright-red fruits are produced in clusters. Its acute leaves are tomentose beneath. It is a native of Nepal, and was introduced in 1824.

C. laxiflora is a deciduous species of about four feet or five feet; it has very small, pink flowers, with leaves tomentose on the undersides. It was introduced from the Himalayas in 1826.

C. microphylla is a most beautiful plant of very rapid growth; the small leaves are very bright or glossy above, tomentose beneath, and very closely set on the branches. The plant will cover a wall very quickly and very closely, for its shoots may be prevented from obtruding many inches from

the face of the wall. The flowers are white, solitary, and produced in April and May, followed by the red fruits. This species is a native of Nepal, and the year of its introduction was 1824.

Loudon writes of this delightful old plant:—"Grafted standard high on the thorn or any of its congeners, this shrub forms a singular and beautiful evergreen, drooping tree; or it will cover a naked wall nearly as rapidly as Ivy, and it possesses a decided advantage over that plant, in its shoots, which may be prevented from extending many inches from the face of the wall, and, consequently, being not likely to injure the plants growing near it."

C. multiflora grows about four-feet high, and was introduced from Kashmir in 1837. It is a deciduous species, and produces its white flowers in May, these being followed by reddish fruits, but this *Cotoneaster* is not so desirable a garden plant as some others.

C. nummularia will grow to a considerable tree, sometimes attaining to a height of from fifteen feet to twenty feet. It is a deciduous species, and came to this country from Kashmir and Western Thibet so far back as 1824. It may be preferable to describe this plant as sub-evergreen rather than deciduous; the leaves are densely woolly beneath, the flowers white, these being succeeded by small, black fruits.

C. Simonsii is, perhaps, one of the best known species, more particularly as a wall shrub. The bright green leaves, which are slightly tomentose on the under sides, contrast attractively with the slightly elongated, bright-red berries. The origin of this plant is unknown.

C. rupestris is one of the gems of the family. I have in mind a glorious plant, sprawling over a low wall, smothered with its brilliant berries and bronzy-crimson foliage, a joy the whole winter through; it is an admirable plant for the large rock-garden.

C. thymaefolia, which grows less than a foot high, is a delightful little plant for the rockery; the tiny, pinkish flowers are produced in April and May. The very small, crowded, dark-green leaves are white beneath; the branches are congested, often decurved, and the scarlet fruits are freely produced. *C. thymaefolia* was sent home from the Temperate Himalayas in 1852. *C. t. congesta* is a remarkable variety of this species, forming a round, compact mass.

C. vulgaris (syn. *integerrima*) produces its reddish-brown flowers in May. The fruits are globose and brilliant red; the leaves are oblong-elliptic and densely tomentose beneath. The plant grows three feet to five feet high and is a native of Europe (including Britain), North and West Asia, and the Himalayas; in fact, it is a cosmopolitan plant.

Other lesser-known species are *C. Hookeri*, *C. pannosa* (a very desirable and distinct plant), *C. pyrenaica* (which is an excellent plant for the rock-garden), and *C. uniflora*. *C. angustifolia* is a most distinct shrub, or rather small tree, of somewhat vigorous and coarse growth; its glory is in its branches, furnished with bright-orange berries, colouring in late winter or early spring; its bane, the formidable spines with which it is armed.

It may be mentioned that, suitably placed, the foliage of many *Cotoneasters* will develop delightful colouring during autumn and winter. *Cotoneasters* may be propagated from seeds sown in spring, by cuttings inserted in autumn, by layering in spring, or by grafting on *C. vulgaris*, or on the Quince or Hawthorn. *Ralph E. Arnold.*

OZOTHAMNUS ROSMARINIFOLIUS.

THE inclusion of this charming shrub in the list of plants that received Awards of Merit at the Royal Horticultural Society's meeting on June 23 makes one wonder how

many other good old plants have not been recognised in this way, doubtless owing to their not having been presented to the Committee for their consideration. If, as I think we ought not to do, we do not take the question of novelty into consideration, then assuredly *Ozothamnus rosmarinifolius* thoroughly deserves the award, which may help to bring it into notice again.

It is, unfortunately, as you suggest in your report, not too hardy, but I believe it to be harder than is generally understood. I had a good plant for several years on a low wall, facing south-west and in a far

ELLIOTTIA RACEMOSA.

NAMED after Mr. Stephen Elliott, this native of Georgia, in the southern United States of America, was not introduced to cultivation in this country until 1894, when Mr. Berckmans sent specimens, with small roots attached, to Kew. Unfortunately, all these failed, but Mr. Berckmans sent two well-rooted plants in 1902 and one of them flowered for the first time in 1911. *Elliottia racemosa* is an extremely rare plant and Mr. W. J. Bean, in his *Trees and Shrubs Hardy in the British Isles*, considers that the two plants at Kew and some young

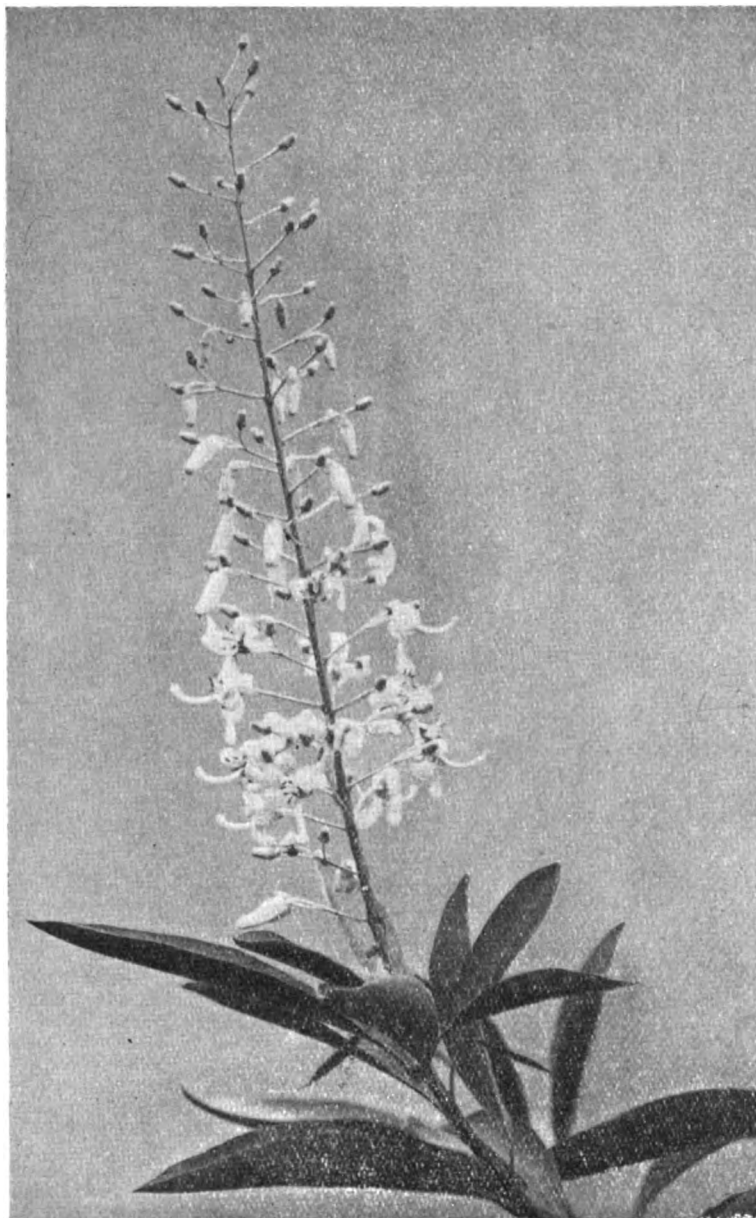


FIG. 21.—ELLIOTTIA RACEMOSA.

Photo C. P. Raffill.

from sheltered position, twelve miles or so from the sea, and it survived for several winters without protection and flowered freely every summer. Much to my regret, an unusually trying winter proved too much for it, and the plant died. It would possibly have been saved had it been but slightly protected. This plant is far from common and it had many admirers with me, although I always took care to explain to those who admired it that its reputation for hardiness was not of the best.

But I would urge upon readers, especially those living near the sea, the desirability of trying this lovely shrub, which is graceful alike in flower and foliage. *S. Arnott.*

ones raised from them were the only specimens in Europe in 1914. As this species has lost the power of producing seeds and appears only to reproduce itself by sucker growths, there is great cause to fear that it will rapidly disappear as a wild plant.

Elliottia racemosa is a medium-sized, deciduous shrub, but may attain the dimensions of a small tree with age and under exceptional conditions. The dull, dark green leaves are paler beneath, oval, and tapering sharply at each end. The small, pure white flowers are produced in a light terminal raceme (Fig. 21), and the flower stalks are also white. This species is figured in *Bot. Mag. t. 8413.*

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XIII.—GENERAL REMARKS ON THE FLORA.

I HAVE dealt so far with special groups of plants, those from which most of the horticultural novelties are drawn, the jam of the flora so to speak. We must now say something of the more solid foundation, lest a one-sided impression of the flora be conveyed.



FIG. 22.—BIRCHWOOD WITH PURPLE "LAPPO-
ICUM" RHODODENDRON UNDERGROWTH.

During our journey eastwards as related, we had passed gradually from very arid conditions, where neither trees nor shrubs grew naturally, to scrub and forest. So far we had met with only mixed forest and Conifer forest; but if we travel a little further east, or cross the Himalaya, we shall

soon come to forests of broad-leaved trees, and presently to solid jungle.

Forest everywhere covers the middle slopes of the mountains. There is not much Pine forest, and what there is occurs low down in the valley of the great river. In the *rong* we live on the edge of the Picea

more like *C. lobatus* than *C. incanus*, to mention two species in cultivation; but the flowers are twice as big as in the former. It forms sprawling clumps in the alpine pastures, and all round the cornfields in the *rong*. The only attractive species of *Thalictrum* was a giant mauve-flowered plant,

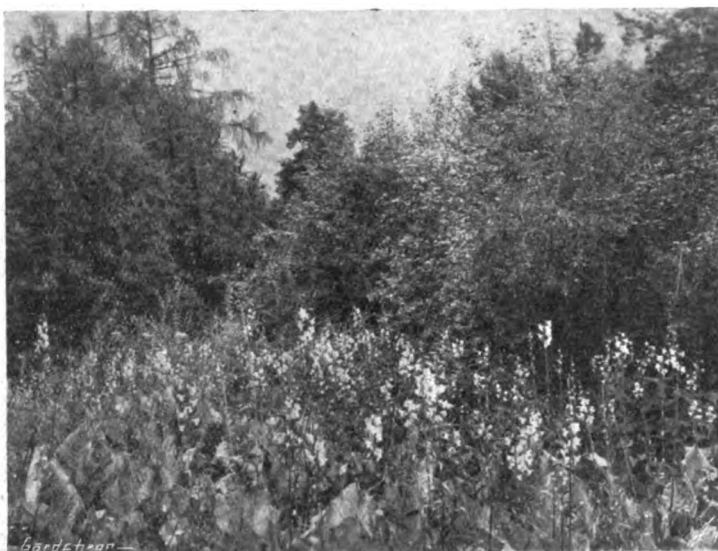


FIG. 23.—MEADOW OF LILIAM HYACINTHINUM

forest, which higher up becomes almost Rhododendron forest, with Abies and Juniper. The trees here are all draped with Lichen; but on the Himalayan range they are heavily laden with Moss. Larch also occurs high up. Lower down, a few broad-leaved trees—Maple and Birch chiefly, mingle with the Fir trees and Rhododendron, and this mixed forest soon passes into Oak forest, which in turn dwindles to scrub.

The forest is invariably quite open, and there is no difficulty in penetrating it in almost any desired direction; such undergrowth as there is consists mostly of Rhododendron and species of *Lonicera*.

Besides the forest, there are broad pastures, usually boggy, which are a feature of the *rong*; while in the alpine region the mountains are well covered with dwarf Rhododendron, which, at still higher altitudes, gives place to scree and barren, stony deserts, moraines, and the like.

The weather, of course, bore some relation to the vegetation. On our journey down the river we caught the spring snow and rains; nevertheless, the rainfall here is not heavy, and there is a long, dry, cold season with fierce wind. The further we went towards the great snowy ranges, the longer became the rainy season, the shorter the dry season; but even in the *rong*, protected behind a rampart of lofty mountains, we were in a by no means wet climate, despite the four months summer rain, which irked us. Though the rains broke as early as June 8 and though it rained almost without cessation till the end of July, there were distinct signs of improvement in August. We had fine days. The clouds were higher; and the rain came more in the form of heavy showers than in a deluge.

At this time there were many flowers in the fields, though few of garden value. The meadows, indeed, looked very much like English meadows, until one looked more closely. There were great, golden Rag-worts and enormous Thistles, sheets of purple Loosestrife, tall Meadow Rue, Monkshood, purple Salvia and other gross Labiatae, big Umbelliferae, Compositae, etc. There was also a slender and rather graceful Adenophora with pale blue, violet, or white flowers; and best of all, a splendid Cyananthus with deep violet flowers. This last was

very like *T. dipterocarpum*, but with smaller leaf segments, and nearly always five-petals instead of four. The purple-flowered *Lilium hyacinthinum* (Fig. 23), also grew in the



FIG. 24.—OLD POPLAR TREES BY A STREAM
ON THE DRY PLATEAU.

ruck, with several species of *Polygonum*, and a brilliant blue-flowered Larkspur, like *D. yunnanense*. Patches of crimson *Pedicularis* and a mist of sky-blue *Cynoglossum* would be met with here and there. In the open bogs there was now hardly anything but a strident orange *Pedicularis*, with a small white-flowered *Parnassia*, and sprigs of golden *Saxifrage*.

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1 1924, April 4, May 9, June 6, June 20, and July 4, 1925.

Though there is no limestone (at least, we have come across none as yet, since we crossed a low limestone ridge on May 1) there are many Saxifrages, chiefly of the "Herculis" type, a few "mossies," one "encrusted," and one of the large-leaved purpurascens type. But of the dozen or more species found, only four so far show promise of being good garden plants. The genus is such a favourite one with rock gardeners, and has been so thoroughly taken up by horticulturists at home with such astonishing success, that it is a waste of time to bring home second-rate stuff. There are vast numbers of first-rate species, hybrids, and varieties on the market already, and no room for any more at present, unless it is of exceptional merit.

In the high alps, however, so early as the end of July, we came upon a curious species, with nodding flowers of opulent purple, which seems to form a link with the large-leaved purpurascens type. It is a Saxifrage of so unusual a colour, and withal of so neat and compact appearance, forming small clumps on the hillside, that room might be found for it in any rock garden, amongst the gems of the genus. Another species, with large, nodding, golden-yellow flowers, borne on short, leafy stems, appears to be worthy of a place; while a third species forms leafy mats studded with large, almost sessile, flowers, bright yellow, speckled with orange. It is early yet for Saxifrages, however, and we may find better ones in the autumn.

Similarly with Gentians. We have found half-a-dozen in flower already in the high Alps, yet scarcely one to write home about. There are signs of a fine "ornata" species on the grassy banks round our house; but that will not be in flower till September. On the whole the Gentians, so far, resemble those of Western China.

The genus Pedicularis is, of course, prolific in species. They are for the most part summer flowers, brightening the meads and alpine pastures when the glory of June flowers has departed. I collected fifteen species in July. Many of these were of types familiar in Western China, or on the Burmese frontier, though perhaps different species; a few were quite new to me.

I have already commented on the number of species of Lonicera met with—none of them like the familiar Honeysuckle of English lanes. Three or four are perhaps worth bringing home. The last we met with was a dwarf with pale sulphur flowers, borne in great numbers on the creeping stems. It came from the screes at 14,000 to 15,000 feet.

In the lower forest there were few flowers to be seen after the end of the heavy rain. Only where streams bubbled, colonies of the Giant Cowslip, with great petiolate leaves, unlike those of a true "Sikkimensis" Primula (matched, so far as I know, only by those of *P. tsetzuenensis*—which after all may not be a true "Sikkimensis"), stood in serried ranks. The other big meadow "Sikkimensis," with pale moon flowers, was virtually over by the beginning of August, but the dwarf one scarcely opened till the end of July, and coloured the alpine bogs throughout August. Besides these late Primulas, there were a few species of Impatiens in the forest which mostly overflowed into the meadows as well; and the big, ugly, yellow Gentian (*G. stylophora*?).

In the higher forest, however, where Juniper clothed the south flank of a valley, and Abies the north, there was more on view. Here flourished amidst the grass a *Codonopsis* with tubular flowers like a *Leptocodon*, lavender, or sometimes purple; a tall, lanky plant with foliage more odious than odorous.

In the alpine region there are plenty of flowers in August, but not many of any horticultural appeal—or it may be that such plants do not thrive with us. The *Cremanthodiums* are graceful enough, though I

have never seen one in England. We found four species, two or three of which I have met with in Western China—or species like them. Other alpine plants include a bright yellow *Crepis*, found on the Rhododendron moors, a species of *Saussurea* on the screes, a *Cochlearia* from boggy ground, one or two species of *Lloydia*, a *Fritillaria* (this flowered in June), *Cassiope*, and at long last, an *Isopyrum*, which I take to be *I. grandiflorum*; at any rate it has mauve flowers and sea-green Maidenhair Fern-like foliage. I had almost given up hope of finding an *Isopyrum* when at dusk one evening I came

the boulder screes, vast clumps of *Sedum* form prominent objects.

But the screes here are nothing compared with those vast, white rubble ones, met with on the limestone ranges of the Tibetan Marches; nay, they are puny things, mere gravel tips, leaving no scar on the landscape. These massive crags are not so brittle, nor perhaps is the climate so harsh.

Naturally, the typical limestone plants of Yunnan are lacking. There are no "Suffuticosa" Primulas, no "Solms Loubachias," no *Daphne calcicola* or *Campanula*

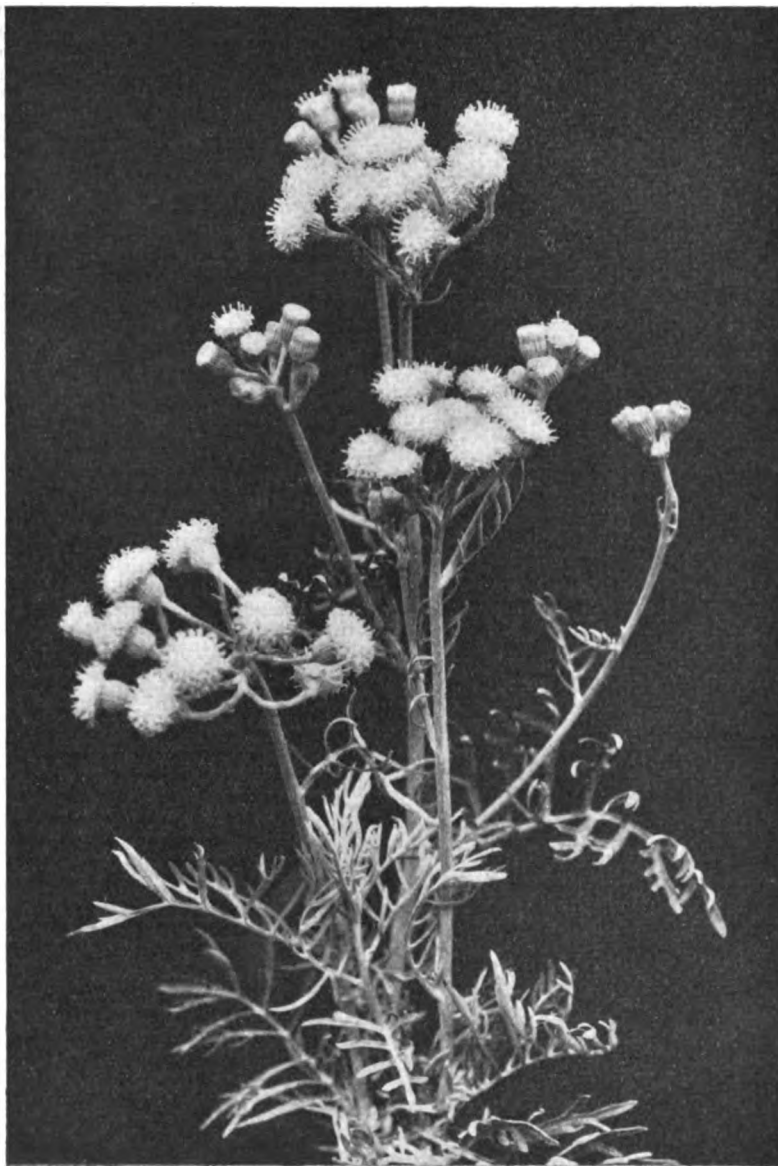


FIG. 25.—SENECIO LEUCOSTACHYS.

(see p. 52).

upon a few clumps of this lovely plant on the gneiss cliffs.

There are a few cushion plants also, *Arenaria*, *Saxifraga*, and *Potentilla*; but I have seen no trace of the superb *Myosotis Hookeri*. There is a bright flowered alpine *Potentilla*, something like *P. peduncularis* which would decorate the rock garden; and on the screes I have seen an orange-flowered *Scrophulariad*, genus unknown, which might be an acquisition. Other scree plants include several tiny *Cruciferae*, a few small and usually dull-flowered *Compositae*, *Umbelliferae*, etc. But from the botanical point of view these plants are always interesting in their struggle with hostile conditions. On

calcicola, or any other "calcicola"; neither are there any "Cephalanthum" *Rhododendrons*, nor *Nomocharis*—not that *that* is a limestone plant—nor many other things. Yet we are well supplied in our own way.

Quite one of the most interesting alpine is a small, dark, brownish-purple Lily, in form very similar to the yellow *Lilium lophophorum* (or is it *Fritillaria lophophora*?). When I first saw it, I claimed it as a *Nomocharis*; but the almost identical perianth lobes, never expanding, ruled *Nomocharis* out of court. Nevertheless, the elongated, squamate bulb is more *Nomocharoid* than *Lilioid*. And here is the curious feature. The chief diagnostic character of *Nomocharis*

after the peculiar stamens, is the glandular area at the base of the inner perianth lobes, divided into two by a ridge. This purple dwarf Lily (for so I must continue to call it, having so begun), has, not a ridge, but a sinus or groove down the centre of each inner perianth lobe, and an area at the base, on either side of this groove, covered with glandular hairs. It is these hairs which really perform the secreting function, so that in this case also we have a glandular area divided into two halves, though by a groove on the inner petaloid surface, corresponding to a raised ridge on the lower surface. This character is *Nomocharis*. On the other hand, there is nothing of *Nomocharis* about the stamens. Are we to call this plant a Lily, a *Nomocharis*, a *Fritillaria*, or something else? At any rate, I fancy it furnishes another link in the chain connecting these genera. *F. Kingdon Ward*.

PLANTS NEW OR NOTEWORTHY.

SENECIO LEUCOSTACHYS.

SOMEWHAT resembling in general habit the well known *Senecio Cineraria* which is naturalized on maritime rocks in parts of these islands, the plant illustrated in Fig. 25 is a native of South America, having been introduced into cultivation from Uruguay in the year 1893. It is of sub shrubby, bushy habit, with white-tomentose leaves that are elegantly pinnatisect or divided. Only half hardy, it requires the shelter of a cool greenhouse for the winter, but may be used as a bedding plant with advantage, its silvery foliage being very effective. It may also be cultivated in pots for the decoration of the greenhouse, coming into flower at the end of June. Propagated by means of cuttings in autumn, it is also readily raised from seeds sown in spring.

Other members of this extensive genus from that part of the world where *S. leucostachys* grows naturally, include *S. pulcher*, with its handsome purple flowers in summer and autumn; *S. Hualtata*, with handsome foliage and numerous white flowers; and *S. Smithii*, from the Magellan region, with large, glossy green leaves and larger white flowers than the above. All these are good hardy perennials, the two latter requiring a cool, moist position. *W. I.*

PARTIAL SOIL STERILISATION.

THE question of partial soil sterilisation is not a new one but probably less has been done on a large scale in this direction in public gardens than in commercial establishments where growers are often faced with the problem of either moving and replacing huge bulks of soil or adopting some means of treating a so-called "sick" soil to restore fertility.

The highly intensive methods of cultivation practised in glass-houses whereby rich soils are prepared, the crops grown highly fed and temperature and moisture maintained by artificial means, also favour the multiplication of a host of other living organisms, many of which may become parasitic on the crop grown and render it an uneconomic one in spite of intensive feeding. If such soils are treated so as to free them from these harmful organisms the competition between them and the crop plant is eliminated and economic cropping again becomes possible.

There are two general methods of partial sterilisation. The soil may be heated either

by steam or dry heat to 180° or 200° F., or it may be effected chemically by the use of soil antiseptics, and although in some ways the use of chemicals may be more convenient it is often less effective owing to the difficulty of distributing the materials used uniformly throughout the treated soil. Even when the disinfectant used is soluble or easily emulsifiable and is watered in, it is not certain that the distribution through the whole mass is complete. The top layers may abstract from the solutions or emulsions, leaving the water only or at any rate an insufficient amount of the antiseptic to penetrate to greater depths.

Numerous experiments have been carried out at the Rothamsted Experimental Station to test the value of various antiseptics, and while a comparatively large number of substances including the volatile and heavy hydrocarbons, tar acids, tar bases, and formaldehyde have proved effective and given good results when applied to the soil, the difficulties in the application and handling of many of them tend to limit their use. Formaldehyde would appear to be one of the most effective. It is volatile and spreads readily in the soil without being absorbed locally like some other substances.

My own experience with antiseptics is restricted to the use of cresol and calcium sulphide. Cresol is a tar acid and is effective under certain conditions. It does not emulsify freely in cold water, however, although it is completely soluble in warm water; it is also abstracted from the emulsion by the soil so that it does not penetrate in the correct strength to a sufficient depth. Calcium sulphide is the old-fashioned gas-lime which, owing to changes in gas production methods is hardly obtainable at the present day. It was a very effective agent and, moreover, left the useful calcium carbonate in the soil after having done its work, thus providing the soil with an appreciable amount of calcium.

Most gardeners practice partial sterilisation in a small way by heating the soil in which to sow seeds or for other special purposes, but possibly many do not realise the possible increase in crop to be obtained by carrying out sterilisation on a larger scale.

There are two methods practised for partially sterilising soil, viz., steaming and baking or flaming, but probably steaming is the most satisfactory. Steaming may be done on a small scale for testing purposes by means of a water jacket boiler in which boxes or pots of soil or even free soil can be placed, the temperature raised to about 200° F. and left at that for an hour.

In a series of experiments carried out by this means, using Mustard as the crop, the increase in weight over the control was in every case a substantial one, varying from seventy-five per cent. in the case of the lowest to as much as one thousand per cent. in one case, with an average of two hundred and thirty per cent. increase over the controls for the whole series of forty-four boxes.

In these particular experiments two kinds of soil were used. In one case soil was taken from a well cultivated garden which had been liberally manured during the previous five years, in the other case it was taken from a field where the soil was comparatively poor and had not been manured recently. In the series of experiments samples were taken from depths varying from two to eighteen inches in each type of soil with the object of ascertaining whether heating proved of greater benefit at any particular level. There was, however, no evidence to show that enemies to plant growth which are capable of being destroyed by heat are more prevalent at any certain depth or that they move up and down according to the season.

While the maximum increase obtained

varied from the top layer through the whole range of depths to eighteen inches in the case of the richer soil, the maximum increase was confined to depths of not more than ten inches in the case of the poorer soil. There was, however, distinct evidence to show that the benefit obtained from steaming was not confined to the first crop, as successive crops grown in the same soil gave considerable increase over the control.

For steaming soil on a large scale a grid-iron shaped implement may be used, made of inch piping perforated with small holes. This can be placed in a wooden frame without top or bottom, the soil filled in and covered and steam conducted from a boiler. By this means and the use of a high pressure boiler the soil is quickly heated to a temperature of 200° F.; the steam should not be applied for more than fifteen or twenty minutes, as soil, being a bad conductor of heat, retains a partially sterilising temperature for several hours after treatment. If a low pressure boiler is used it naturally takes a much longer time and a less quantity should be treated at one steaming.

A simple method of steaming soil in the open which has been practised here is to cover the surface of the plot prepared for steaming with shallow trays, sealing the edges by piling soil round them and conducting steam underneath. The trays used were about six feet square and roughly made, the frames being of four feet by two feet, to which one-inch boards were nailed, the inside being lined with thin zinc sheeting. The steaming was carried out with a small, low pressure boiler and a series of four sets of four plots was prepared, No. 1 being used as control for each set and Nos. 2, 3 and 4 being steamed respectively, one, two, and three hours, Potatoes, Carrots, Beet, and French Beans being the crops grown. Little benefit was derived from less than two hours steaming and the maximum increase was obtained from three hours steaming in every case as shown by the following table:—

Plots.	Potatoes.	Carrots.	Beet	French Beans.
No. 1—Control ...	100	100	100	150
No. 2—1 hour steam ...	100	100	100	100
No. 3—2 hour steam ...	200	150	175	200
No. 4—3 hour steam ...	300	300	200	275

A further series of two sets of two plots was prepared in which one plot was steamed for three hours in each set, the other being used as control. On these Spinach and Turnips were grown and, again taking the weight of the crop on the control plot as 100, that of the Turnips was 198 and that of the Spinach 300. A noticeable fact in watching the growth of these crops was that not a weed of any description appeared on the steamed plots, which is an additional advantage derived from sterilising.

The first results of partial sterilisation are disappointing, as germination is retarded and growth is slower on the steamed plots than on the controls. After two or three weeks, however, growth is accelerated on the treated plots and soon overtakes that on the controls.

Partial sterilisation may also be effected by direct heat in which the soil is either baked or flamed. The choice is largely a matter of convenience or mechanical detail as the effectiveness appears to be equal in both cases when the soil is equally heated. When direct heat sterilisers are used it is preferable to use the soil fairly moist, as there is then less danger of over-heating and the heat travels more quickly and uniformly through the mass. *W. Auton, Pyrford Court Gardens, Woking.*

NOTICES OF BOOKS.

Spraying against Apple Scab.*

THE value and quality of the home-grown Apple crop are so seriously depreciated by scab in seasons which favour the disease, that the possibility of reducing the damage by spraying cannot too often be demonstrated. The report under notice refers to experiments carried out during 1923 and 1924 in a commercial plantation in Kent. The trees sprayed are of bush form and of the variety Bismarck; and all had suffered severely from scab in 1922. The washes used were Bordeaux mixture (8 lb. copper sulphate, 8 lb. quicklime, 100 gallon water), lime-sulphur 1 to 20, and lime-sulphur with arsenate of lead. The last wash was mixed as follows: 1 gallon of the concentrated lime-sulphur was mixed with 28 gallons of water, and a further gallon (making 1 to 20) used to thin down the arsenate of lead paste (1 lb. 5 oz.). The diluted lime-sulphur and lead arsenate were then mixed together and at once transferred to the sprayer.

In both years all three fungicides gave very considerable control of scab. As the actual results varied on different rows, probably in accordance with the severity of the disease, it cannot be actually stated which of the washes answered best. In 1923, when two post-blossom sprayings were given, all the fungicides materially increased the proportion of Apples entirely free from scab, the increase varying from fifteen per cent. to seventy-five per cent. on different rows. In 1924, the control trees averaged only twenty-one per cent. of Apples free from scab, and no less than twenty-nine per cent. unfit for market. Those sprayed with Bordeaux mixture, twice and three times applied, averaged seventy-four and seventy-three per cent. of scab-free Apples and only five per cent. unfit for market. All three washes caused some slight injury to the leaves, but not of any economic importance. There was no shrivelling nor defoliation. Some evidence was obtained that the washes containing lime-sulphur caused some dropping of the young fruit, whilst Bordeaux mixture did not.

An interesting feature of the experiment is the early discovery of scab on the leaves. In 1923, the first spraying was done on May 23 and 24, when the trees were just out of flower. Since the trees had previously been found to be practically free from scab pustules on the young wood, it was expected that at that date the washes could be applied to trees still quite healthy. Such, however, was far from being the case. Inspection showed that the scab fungus was already firmly established on many of the trees, particularly on the leaves around the bloom clusters, the earliest to appear in spring. This led to the discovery by two of the experimenters of a hitherto overlooked stage of the fungus which enables it to winter on the dead leaves, and probably give rise to the earliest infection in spring (*Gard. Chron.*, April 5, 1924, p. 190). In consequence of this discovery, the trees were examined earlier in 1924. On May 1, when they were in the pink bud stage, the scab fungus was found on a few of the earliest leaves, chiefly those nearest to the ground. It was decided to try the effect of three sprayings on half of the trees, instead of two as given in the previous year, the extra application being given before blooming. Unfortunately, rain followed the application of each wash at this early spraying, none of the washes having a chance to dry on. Thus the result was rendered negative, or even in some cases in favour of two sprayings as against three. However, the authors have evidence of the value of spraying in the pink bud stage on other varieties, and this will be published later.

* *Spraying Experiments against Apple Scab.* By N. B. Bagena, W. Goodwin, E. S. Salmon, and W. M. Ware. South-Eastern Agricultural College, Wye, Kent. Price 6d.

Systematic Pomology.*

THIS work was written to serve as a text-book for American and Canadian students of systematic pomology. Rather more than half of the volume is occupied by excellent descriptions of varieties of fruit grown in North America, but the rest of it contains much that is of value to English students who wish to take up the subject of describing, classifying, and identifying fruits. After dealing in separate chapters with the principal organs of plants, such as root, stem, leaf, flower, and fruit, useful for purposes of description and identification, the author gives some valuable hints on methods of work in systematic pomology. The first step in the study of a fruit, he states, is to make a written description of it. A good description of plant and fruit is far more satisfactory than models or herbarium specimens, which show only parts of what must be studied. Insufficient characterization is the chief fault of systematic pomology; the need for fullness is being recognised more and more. Stem, branch, leaves, flowers, and fruit should all be dealt with in a full pomological description. "Blanks" or forms for use in preparing descriptions are shown for each kind of fruit, and should prove very helpful to students and pomologists. The use of such forms makes for uniformity in descriptions, and ensures that no important characteristics are missed. The author has also provided keys for the identification of varieties. These refer to American varieties, but they might well serve as models for those who wish to prepare keys to the varieties grown in other countries. They seem to be well designed for their purpose.

A greater variety of fruit is grown in America than in this country. Blackberries and Dewberries are greatly valued. Nurserymen offer about a hundred varieties, and introductions are still being made every year. Various "heath fruits" are also cultivated. The large Cranberry, for instance, is cultivated on thousands of acres, some thirty varieties being grown. As it is an inhabitant of swamps and damp heaths, the pioneers of the industry had to invent their own methods of treatment and cultivation. Several species of Blueberries and Huckleberries are now under process of domestication. In the past attempts to bring these fruits under cultivation failed because it was not recognised that they will grow only in acid soils and in association with a particular root fungus.

About two hundred varieties of Apples can be obtained from American nurserymen, but the tendency is to shorten the list. Pears thrive in few districts and are becoming less popular. Japanese Plums are grown as well as the "Domestica" varieties such as we cultivate. They are inferior in quality to the latter, but are adapted to a much wider range of conditions, come into bearing earlier, and are less subject to diseases. California has the monopoly of the Apricot industry, furnishing America with the fresh fruit and the whole world with the cured and canned product. The reason is that the bloom appears so early that elsewhere it is usually caught by spring frosts. Black and purple Raspberries are grown in addition to the usual kinds. Only three varieties of Black Currants are described, Boskoop Giant being considered as quite the best. This fruit has never found favour in America. Gooseberries also are neglected, two varieties, Houghton and Downing, being grown almost to the exclusion of others, the refreshing quality of the ripe fruit is practically unrecognised. Other fruits described in this book are Cherries, Peaches, Nectarines, Quinces, Grapes, and Strawberries. A full glossary of terms is included. *M. G.*

* *Systematic Pomology.* By U. P. Hedrick, Horticulturist of the New York Agricultural Experiment Station. Rural Text-book Series, edited by L. H. Bailey. London: Macmillan and Co., pp. 488. Illustrated. Price 17s. net.

HARDY FLOWER GARDEN.

TWO NOTABLE CAMPANULAS.

THROUGHOUT the latter part of June—thus coming into bloom earlier than most of the larger Bellflowers—*Campanula van Houttei* and *C. Burghaltii* have been remarkably beautiful objects in a mixed border. These fine varieties appear to owe their origin to *C. punctata*. They are of an elegant, tufty habit, the several slender stems, about a foot or more in height, being adorned with very long, large, and deeply-cleft bells, those of *C. van Houttei* being a blue-purple, whilst those of *C. Burghaltii* are a delicate, satiny-lavender. That, at any rate, seems to describe the colours of these two plants as sent out by the comparatively few nurserymen who list them, but even the authorities are by no means agreed as to what the varieties bearing the above names should be like, and there is more than one opinion as to their origin. If they bear some resemblance to *C. latifolia* in the shape of the flowers and the ovate, serrated leaves, they come nowhere near approaching the stature of that giant. Anyhow, *C. van Houttei* and *C. Burghaltii* are a couple of distinct and very beautiful Bellflowers of the highest merit for border culture. They grow quite easily anywhere in sun or part shade. *J.*

HERACLEUM MANTEGAZZIANUM.

OF the several great ornamental Umbellifers of the Parsnip race, the subject of this note is probably the handsomest. It is a plant of most imposing stature, making flower stems up to seven feet in height, these being crowned with lavender-tinted, white, compound umbels which are often well over a foot in diameter. The pale green leaves are large, rigid, and deeply cut, and both these and the flowering stems are dappled and streaked with purple. Unlike most others, this splendid species will form a huge bush, perhaps a dozen feet across, instead of concentrating upon a single stem. It is by no means fastidious as regards soil and situation, but evidently prefers a cool but well-drained rich, medium. Not objecting to considerable shade it is a fine plant for the margins of woodland or associating with evergreens, its noble flower heads never looking so well as when seen against a dark background in evening light. Propagation by seed is a simple matter. *A. T. C.*

PUBLIC PARKS AND GARDENS.

THE new park at Brighton recently opened by the Mayor, Alderman C. J. Teasdale, comprises ninety acres of downland running from the main Lewes road to the Ditchling road, to the north of the town. For twenty-five years it has been undisturbed by man, except for occasional rabbit shooting. Last July it came into the hands of the Council, who intend to leave it in its wild state for the enjoyment of residents and visitors. The park is rich in downland flowers and wild Strawberries and Raspberries, and its stretches of springy turf are varied by clumps of trees and patches of Gorse. With this addition, Brighton's open spaces and recreation grounds total nearly seven hundred acres.

A TREE of *Eucalyptus Globulus* has flowered in Hampden Park, Eastbourne. The Borough Head Gardener, Mr. T. Smith, has kindly sent us a spray with one flower expanded and one flower bud. Mr. Smith states that the unopened bud resembles the husk of an Acorn, and that the operculum or lid is most interesting, for when this is detached the flower gradually reveals itself.

MARKET FRUIT GARDEN.

ONLY one shower, .09 inch on June 24, broke the drought which set in on May 30, and that was not enough to make any impression on the parched ground. Up to the end of the month however, the drought had not shown any very serious effect on fruit crops. The Strawberry harvest was cut short, it is true, and Raspberries were looking far from happy, but these crops were never very promising. It was not until the last week that Black Currants began to look as if rain would do them good. Tree fruits cannot be said to have suffered. In fact, they have made plenty of growth and some good, hard foliage, and the fruits are swelling rapidly. Evidently there was plenty of moisture down below for them, as there must be after the wet weather of previous months. It is in this that the present season differs from that of 1921. In that year I did not register a drop of rain during June; and the result was very serious because the drought was preceded by several months of under average rainfall. The total rainfall for the first six months of 1921, at my place, was only 7.33 inches, whilst for the same period of the present year it has been 14.17 inches, which makes all the difference. Nevertheless, rain would be very welcome now, particularly for the soft fruits, which would gain much in weight of crop.

APPLE PROSPECTS.

This season seems to be characterised by the dropping of fruits of nearly all kinds in the very early stages. To judge from reports read and heard, Apples appear to have followed the example of Pears and Plums in many districts, although there are more exceptions than in the case of the last-named subjects. The crop throughout the country may perhaps be best described as patchy. If this is true I must consider myself lucky, for I certainly have a full average crop of Apples up to the present. There are very satisfactory crops of Beauty of Bath, Mr. Gladstone, Worcester Pearmain, Cox's Orange Pippin, Charles Ross, Allington Pippin, Lane's Prince Albert, Lord Grosvenor, and Domino. Lord Derby and Newton Wonder are decidedly light, whilst Bramley's Seedling and Blenheim Pippin are patchy, but heavy on some blocks of trees.

Although this account appears to be very satisfactory, I do not mean to imply that the crop approaches within measurable distance of the extraordinary promise of the bloom. It never does, I think, when blooming is more than normally profuse. The brilliant display of blossom apparently puts too great a strain on the tree. If this explanation is not sufficient we must search for another reason for the comparatively low percentage of fruits set in the conditions ruling during the previous season, for no one can say that the weather at blooming time was anything but most favourable. It was calm and sunny, and bees were very numerous amongst the trees. It seemed at the time as if every bloom must set.

INFLUENCE OF PREVIOUS SEASON.

It is easy to form theories about the influence of the previous season and equally easy to upset them. The unripened wood theory I discarded in previous notes. Some of the wood which should have borne fruit was ripened twenty years ago. It is only the tips of the shoots of the current season's growth that fail to ripen in a wet, sunless summer. I prefer some explanation which has to do with the nutrition of the tree. We know that the setting of the fruit, and its retention after it has set, depends largely on elaborated food materials stored in the tree in the previous autumn. If conditions at the time are unfavourable to the storage process, the tree may bloom, but it will not set much fruit. The first essential is a supply

of plant foods available to the roots. These might easily be lacking in a year like 1924, when the soil was cold and sodden month after month. In such conditions the activities within the soil, which are necessary to render materials available as plant food, are almost at a standstill, so that the trees might easily fail to secure their requirements, even if their roots, after standing in wet soil for two years, were in the best condition to carry out their functions. Then sunshine is another necessary condition for this storage process and for fruitfulness, and this was lacking in the summer and autumn of last year. Possibly gardeners are really referring to the bud-feeding influence of sunshine when they speak of the ripening of wood.

Such theories are interesting, but, as already mentioned, they are easily upset. Exceptions in the way of good crops are too numerous this year to be said to prove the rule. Personally I have a full yield of Rivers' Early Prolific Plums; most growers of Pears have a crop of Conference; and there are many cases of satisfactory crops of Apples. In Kent, I am told, Apples are very patchy. One grower has a good crop, whilst his neighbour has a light one; and in every garden and orchard there are probably some varieties that are doing well. Such exceptions disprove any theory we like to advance, and show us that in this, as in so many matters connected with fruit-growing, we really do not know the reason.

ANOTHER SCAB SEASON.

For the third year in succession the quality of Apples in many districts is seriously threatened by scab. In my last notes I reported satisfactory control by spraying with Bordeaux mixture. Unfortunately, this has since proved to have been premature. The trees appeared to be healthy when the drought began, and I was congratulating myself on the probability of the dry weather keeping down the disease. Far from this being the case the heat seemed actually to encourage scab, for it developed on the leaves very rapidly, and in too many cases on the fruit as well. Possibly the intense heat, with the soil so full of moisture, produced a steamy atmosphere in which the disease flourished. As usual, there are puzzling variations in the severity of the attack in different plantations. In one, the driest I have, Worcester Pearmain, Beauty of Bath, and Cox's Orange Pippin are badly affected. The trees look very sickly, and much of the fruit will be worthless. In other plantations the same varieties are practically clean. There is only one possible reason for this, so far as I can see. The first spraying, given before blooming, began in the plantation where control has failed. At the time the weather was showery. The spray always had time to dry on the trees, but rain fell every night after it was applied. If this is the true explanation it points to the great importance of spraying before blooming, for Worcester Pearmain was sprayed again after the fall of the petals, and the weather was dry then. The failure of the first spraying apparently resulted in poor control, in spite of favourable conditions for the second spraying. It shows also that the particular form of Bordeaux mixture used is easily washed off. I shall have to look for something better, for it is in wet weather that scab prevention is most necessary. I am wondering whether the continuance of the drought will have killed the disease, or whether it will become active again when rain has fallen. At present it seems to have been checked, and plenty of new, healthy foliage has appeared.

THINNING APPLES.

The thinning of Apples was delayed until the end of June, as they were backward and still dropping up to that time. Only a few varieties require thinning this year, as, even where there is a good crop, the fruit

has set singly in most cases. One is rather apt, however, to decide that thinning is not needed, and then to have cause to regret that it was not done when the time comes for gathering the crop. For a grower who aims at getting a good percentage of his crop fit to pack as Grade I, this is a most important operation. Nothing else has so much influence on the size of fruit. It is certainly unsound to omit it on the score of cost. Large trees of bush form, when very full of fruit, do not cost more than sixpence each to thin; and there can be no doubt that the market value of the fruit is increased by a very great deal more than that. Moreover, the operation gets rid of diseased, blemished, and tiny fruit which would take time to sort out in the packing house.

I do not like the plan of leaving early varieties unthinned until the fruit removed is just big enough for sale. It is then done too late to relieve the tree of its burden, and there is not time afterwards for the remainder of the fruit to receive the full benefit.

Pulling off the fruits is apt to loosen the hold of those intended to be left on the tree. It is better to have the work done with Grape-thinning scissors. Where the Apples are bored by sawfly larvae, the thinnings should be collected and burnt.

APPLE LEAF SCORCH.

The blocks of Beauty of Bath and Cox's Orange Pippin which have suffered badly from leaf scorch in recent years, and which were dressed with potash last winter, are decidedly improved. The scorch is much less severe, and there is no actual defoliation as there was last year. Both varieties are carrying a crop, Beauty of Bath a better one than it has had for some years. I am not going to risk bringing down more trouble on my head by claiming this as a success for the potash treatment. I cannot fairly do so, because I left no control trees in the particular blocks treated, and there may easily be other factors responsible for the improvement. In another plantation, not dressed with potash, I have Beauty of Bath and Gladstone very badly scorched, several trees of the latter being completely defoliated.

BOXED APPLES.

Wanting some Apples for testing a new non-returnable package, I recently bought a case of New Zealand fruit. The variety was Statesman, a very poor thing so far as flavour is concerned, but beautifully clean and sound. I was interested in opening the box to see the style of packing and the condition of the Apples. There was a thin layer of wood-wool at top and bottom, and it had evidently served its purpose in protecting the fruit from pressure, for there was scarcely a trace of bruising. In this country the use of such padding is discouraged on the ground that, if sufficient material is used to form adequate protection, it is likely to give, and so to loosen the pack. If this does not happen in the course of the long journey from New Zealand, it ought not to do so on the short journeys involved in marketing home-grown fruit. The matter cannot be settled by opening one box, of course; but it might be worth while to find out from distributors whether imported Apples boxed with wood-wool generally arrive less bruised than those packed without such protection.

GOOSEBERRIES.

In my district Gooseberries are easily the best soft fruit crop of the season. In my garden I picked thirteen pounds of green Whinham's Industry from an old bush. In the field I have only bushes planted two years ago, but these carried just enough fruit to be worth gathering. The varieties are Careless and Whitesmith, chosen in the hope that they are, to some extent, resistant

to American mildew. Careless proves to be the better variety to pick immature, because it keeps its vivid green colour close up to the time of ripening. The downy skin of Whitesmith is not so attractive in the green stage. It is many years since Gooseberries were grown on this place; and I am looking forward to having the crop again, as it brings in a welcome return early in the season. *Market Grower.*

VEGETABLE GARDEN.

GARDEN PEAS.

It is well known that garden Peas like a rich, friable loam, and in a season like the present, the grower who has light, sandy soils to deal with may envy one who commands a rich, friable loam. The advantages are not all on one side, however, and probably earlier in this same season this feeling of envy might have been justifiably reversed when preparation for the crop was the immediate need. In the matter of early gathering also the grower on light soils certainly scores over his confrere on heavy soils, although the cynic may say that this is not an advantage, as once the palate has been whetted by the first dish of Peas the demand is continuous until the heavier cropping later varieties become available.

In private gardens the demand for Peas is continuous for at least five months of the year, i.e. from June to October inclusive, and under favourable conditions the season may extend from mid-May to mid-November. If the grower has adequate space and labour and exercises a wise choice in varieties and the times of sowing them, there is no reason why he should not meet this demand by continuous supplies even on light soils and without inside accommodation.

To insure the production of heavy crops, which alone will afford satisfaction, high cultivation is necessary, and this, briefly stated, consists in manuring liberally and well preparing the soil to a depth ranging from eighteen to thirty inches. To refer at any length to this detail is not necessary, but it cannot be too strongly emphasised that any attempt to produce crops of Peas from soils that are in a hungry state or have merely had the surface stirred, is sure to lead to more or less complete failure. Soils that are deeply dug and manured in winter and left in a rough state will be in the best possible condition for breaking down early in the year for sowing dwarf, early-maturing varieties. For the tall growing varieties, which are undoubtedly more profitable from the crop point of view, I prefer to prepare trenches thoroughly to a good depth some time before sowing as they not only have to support heavier crops but the plants have to withstand more trying climatic conditions.

With my remarks to this point few will disagree, but with my choice of varieties probably all will not agree and yet the selection of varieties plays a considerable part in continuous supply and my comments should be taken as observations on varieties which I have grown with success on light soils, rather than as a recommendation to grow them to the exclusion of others, many of which may be of equal merit. Most growers are cognisant of the fact that the behaviour of varieties varies to some extent in different seasons and it not infrequently happens that a variety to which we have pinned our faith one season rather disappoints us in another. It is therefore not safe to state that because one particular variety which has beaten all others in one season under certain conditions will do the same always and under varying conditions.

The improvement in varieties of Peas during the past fifty years has been sub-

stantial, but the advance in the quality of earliness has been more marked than any other. Such well known main-crop Peas as Veitch's Perfection, No Plus Ultra, Yorkshire Hero, Telegraph, Telephone and Duke of Albany, which are still largely grown, were standard varieties fifty years ago, but none of our present day early varieties is found in lists of that period. A tall-growing variety named Earliest of All is recorded as having been sown in March and ready for use on June 22nd. Present day early varieties can beat this record by five or six weeks under favourable conditions. I have sown the variety Eight Weeks on March 24th and gathered on May 24th (not this year). In justice to those firms which have done so much to improve stocks of Peas it may be stated that many of the present day stocks of the old varieties have attained different characteristics by selecting and re-selecting them and may be much better varieties in consequence.

As already stated, adequate space is essential where one has to supply Peas over a long period, and where this is available the grower need not restrict himself to two or three varieties, but make use of a goodly number to insure his continuous supply. I always grow Pilot for the earliest supply, sowing the seed during the first ten days of November, and it has invariably been ready for use from a week to ten days earlier than any spring-sown variety. Its flavour may not be quite so good as in many other varieties, but this is a point which is never questioned with the first dish of Peas.

For the earliest crops from spring-sown varieties, I prefer the dwarf kinds, as, although they cannot compare with the tall-growing varieties for weight of crop, early gathering may be advanced by growing them on warm borders where it would be difficult to grow the tall varieties. I would grow Eight Weeks for its earliness; Pioneer, a Pea of many excellent qualities; The Sherwood, a good cropper and excellent flavour; and Reading Gem, which produces fine Peas of superior flavour.

Of the taller-growing, early varieties, World's Record has vigorous habit and good flavour, and Thomas Saxton is still a very serviceable variety. For the early maincrop varieties, Centenary is of outstanding merit, and produces an immense crop of large pods filled with Peas of excellent flavour.

Up-to-date is also an abundant cropper, and a good strain of Duke of Albany should be in everyone's collection. For the later maincrop varieties, Peerless is an acquisition for both cropping and flavour; Matchless is a robust variety and abundant cropper; Quite Content is a heavy cropper and a good, exhibition Pea, while good stocks of those two old varieties, Veitch's Perfection and No Plus Ultra are still worth growing.

For the latest crops, which, generally speaking, should not be sown later than about June 10th, Autocrat, Selected Gladstone, and Latest of All are reliable varieties of strong constitution and able to resist mildew in most seasons. Late supplies may also be supplemented by sowing again first early varieties from the middle to the end of June or even the first week in July. *W. Auton.*

WHITE-FLOWED SAVOY.

In your issue of the 20th ult., I read with pleasure my little note on the white-flowered Savoy. Will you permit me to point out a slight error in translation, for which I myself am partly responsible, the wording of the note lending itself to confusion. I wrote, "In the plantation in question there were four *pieds* with white flowers." The translator renders this "four square feet," but I meant to say, four plants ("feet" or "stalks") with white flowers. *E. M.*

BROCCOLI PLANTING

THE time has come round again for the planting out of this valuable winter and spring vegetable crop, and no time should be lost in getting the plants set out in the quarters reserved for them. Even if the weather remains dry, it is better to give the drills a good soaking and water the plants in, afterwards drawing the loose, dry soil in again to conserve the soil moisture, than to allow the plants to become drawn and weak in the seed-bed.

A great advance has been made during recent years in the selection of suitable varieties for winter and spring use. The Peerless strain of Broccoli has proved a great acquisition in those parts of the country where the winters are mild, and where it is now possible to cut useful heads from the time the Autumn Giant Cauliflowers are over. We find that Autumn Protecting, if sown along with other Broccoli at the end of April, comes in nicely during November and December, and we cut some good heads for Christmas last season. Following this, in January and February, came Superb Early White, which did exceedingly well during the mild winter; following closely behind we had Snow White for use in March. During April the variety Satisfaction gave every satisfaction to grower and user alike, and was in turn followed by Late Queen, which gave splendid results during May and early June, thus bridging the seasons, as it were, until the early Cauliflowers were ready.

Broccoli should always be planted on ground that has been well consolidated, as the firmer the soil is in reason the better, as it produces sturdy growth, which comes through our winters unscathed. *A. T. Harrison, Culzean Castle Gardens.*

HOME CORRESPONDENCE.

Azara microphylla variegata.—It may interest your correspondent J. F. (page 28) to know that there is a handsome specimen of this Azara growing in the open at Mount Usher, Co. Wicklow. From recollection I should say it is not less than twelve to fifteen feet in height and about six feet through. I have often admired it as it is one of the most beautiful evergreens in that charming garden. This tree must, I suppose, have been established for a score of years, so that it is not a new plant as suggested by J. F., who will find it in the *Kew Hand-List of Shrubs* and in the catalogues of two Irish nurseries. *J. Matchett Watson, Killiney, Co. Dublin.*

Yew tree poisoning of Sheep.—The earliest recollection I have in connection with Yew is the alarming accusation "Yew (you) killed my donkey." Whether the decease of the said donkey was caused by eating Yew I cannot say, my energies at the time being fully occupied in endeavouring to establish my innocence! I did not see the dead donkey, nor, as a matter of fact, have I seen one since, neither have I seen any animals which have met their death by eating Yew. There can be no doubt, however, that animals have been poisoned by eating Yew. I have frequently been told of such cases. Some persons state that Yew is poisonous during certain periods of the year, others aver that the seeds only are dangerous, while others again declare that there is no danger whatever, and judging by the way in which horses, cattle, and sheep are allowed to roam about within easy reach of Yew trees they evidently have a full belief in their declarations. I have been given to understand that ponies living in forests where Yews abound will not eat the branches, but that fresh ponies brought into the district will sometimes do so, and die in consequence. *C. Ruse.*

SOCIETIES.

NATIONAL ROSE.

JULY 8 and 9. This year the Provincial show of the National Rose Society was held in conjunction with the annual show of the Bath Horticultural Society in the ancient and famous western city. Two years ago, when the National Sweet Pea Society held its show at Bath it was in the Sydney Gardens, which was a beautiful venue but rather restricted in space. On the present occasion the City authorities permitted the use of the spacious Royal Victoria Park where, on spacious, well-kept lawns, amid rare and beautiful trees and surrounded by bright and artistically arranged flower beds, the combined societies pitched their tents and provided a rare feast of floral beauty. But for a slight shower towards the close of the first day, the weather was ideal for cut flowers and the attendance on both days was very good. The Roses were excellent, and in the hands of Mr. Courtney Page, the experienced and affable Hon. Secretary, the arrangements were all that could be desired.

With his customary generosity, Alderman Cebrie Chivers, J.P., the Mayor of Bath, entertained a large company to luncheon at which the Mayoress, Madame Sarah Grand, in a most charming speech, formerly declared the show open. Madame Sarah Grand referred to the Cherry festival in Japan and the worship of the Rose in Kashmir and appealed for similar days in England. Interesting speeches were made by the President of the National Rose Society, Mr. Frank Cant, Mr. H. R. Darlington, and Mr. J. Pitt who remarked that but for the great sacrifices made by raisers there would be few of the lovely varieties now in our gardens.

NEW ROSES.

There was quite a good array of seedling Roses awaiting judgment at the hands of the Council, and of these one was selected to receive the Gold Medal and three received Certificates of Merit.

GOLD MEDAL.

Arthur Cook.—This bright and fragrant crimson H.T. Rose received a Certificate of Merit at the autumn show in London on September 21, 1922, where it was greatly admired. In the bud stage it is particularly well-formed, and opens to a flattish shape at maturity. The foliage is good and the stems have very few spines. The velvety crimson colour is attractively shaded with maroon. Shown by Messrs. S. McGREDY AND SON.

CERTIFICATES OF MERIT.

Doris Traylor.—A beautiful, fully-double H.T. variety which is very shapely in all stages. It is recommended for all purposes and is deliciously fragrant. The colour is a lovely old gold lightly flushed with peach-pink at the base of the broad petals. The plants have a sturdy habit and the neat leaves are stout and shining. Shown by Messrs. S. McGREDY AND SON.

Duchess of Atholl.—The colouring of this H.T. Rose is uncommon and delightful and may be described as old golden orange slightly suffused with peach-pink. It is recommended for exhibition and garden purposes, as the compact habit would make it valuable as a bedding Rose. The stems are purplish, the foliage suggests resistance to mildew and there are no spines on the long footstalks. It is a very fragrant variety and of ideal shape until mature, when the flowers lose their perfection of form. Shown by Messrs. DOBBIE AND CO.

Nanette.—In addition to a graceful habit and charm of form this free-flowering Rose possesses the great charm of fragrance not often found in Wichuriana Roses. The pure white, semi-double flowers are rather more than two inches across, have graceful undulated margins and open widely, dis-

closing a dainty cluster of golden stamens. It is recommended for growing on pergolas and arches. Shown by Mr. ELISHA J. HICKS.

OTHER NOVELTIES.

Messrs. S. McGREDY AND SON showed several of their varieties which had previously received certificates of merit and some others. The chief were Mrs. Talbot O'Farrell, Lady Florence Stronge, Mrs. C. W. Edwards, Mrs. J. Heath, Mrs. Stewart Paton, a bronzy-salmon H.T. which is good in all stages of development; and Margaret McGredy, a broad-petalled H.T. Rose of good shape; the colour is deep scarlet passing to rose-pink and the reverse of the petals is touched with gold, making a bright and effective flower.

Achievement, shown by Messrs. T. ENGLISH AND SON, is noteworthy as being the best Rose with variegated foliage yet seen. The little double flowers, borne in small clusters are of pink shading. Yellow Dorothy, shown by Messrs. FRANK CANT AND CO., is a pale yellow counterpart of Dorothy Perkins, while Diety, from the same raiser, is a roundish H.T. variety with a suggestion of Souvenir de la Malmaison colouring on a white ground and is sweetly scented.

NURSERYMEN'S CLASSES.

The Jubilee Trophy, which is offered for the best thirty-six blooms, distinct, was won by Mr. C. GREGORY with a collection of large and shapely blooms. His chief varieties were Earl Haig, Rev. F. Page Roberts, Mrs. Denniston, Mrs. E. J. Haddon, and Gloire Lyonnaise. The second prize collection of Messrs. F. CANT AND CO. contained a superb bloom of The General, the best bloom in the trade classes, and they also had excellent specimens of Florence Forrester, Lady Inchiquin, British Queen and George Dickson.

The twenty-four blooms which won the first prize for Mr. GEORGE PRINCE were especially good, and included Edel, Lord Charlemont, White Maman Cochet, and A. Hartmann. Mr. C. GREGORY, who was second, included The Queen Alexandra Rose, Mabel Turner, and George Dickson.

The best twelve blooms of new Roses introduced since January 1, 1920, were shown by Mr. GEORGE PRINCE, who staged Lord Charlemont, Muriel Dickson, Souvenir de Claudius Pernet, Earl Haig, Mr. C. Lamplough, and Lady Inchiquin, all of great merit. The second prize exhibit of Messrs. F. CANT AND CO. contained excellent specimens of Capt. F. S. Harvey Cant, Mabel Morse, and Mrs. C. Lamplough.

Many baskets of exhibition Roses were shown and the best was of Mrs. C. Lamplough, arranged by Mr. C. GREGORY, while Messrs. A. WARNER AND SON were second with Capt. F. S. Harvey Cant.

Decorative Roses in baskets were also of great merit. The best five were shown by Messrs. S. McGREDY AND SON, who included excellent blooms of Lord Charlemont, Mrs. Courtney Page, and Mabel Morse. Mr. J. MATTOCK, in his second prize exhibit, had Lady Inchiquin and Louise Crette of great beauty. Mr. C. GREGORY had the best three baskets and showed lovely blooms of the brilliantly coloured Mrs. Barraclough, Messrs. S. McGREDY AND SON were awarded the first prize for a basket of any Rose not in commerce.

Groups of Roses.

In the class for a representative group of cut Roses on a space not exceeding thirty feet by four feet, the first prize was won by Mr. ELISHA J. HICKS with a very handsome arrangement of climbing Ophelia, Los Angeles, Souvenir de Claud Denoyel, Mabel Morse and Madame Butterfly. Mr. GEORGE PRINCE, in his second prize group, had lovely arches of American Pillar, K. of K. and Red Letter Day.

The best medium-sized group was arranged by Mr. C. GREGORY, who included generous vases of Lady Inchiquin, Mabel Morse, Lord Roundhay, and Golden Emblem. The Rev. J. H. PEMBERTON, who won the second prize, showed Paul's Scarlet Climber, Aurora and Penelope with other valuable Roses.

In the smaller class Mr. J. MATTOCK was placed first with a handsome collection of such varieties as Lady Inchiquin, Danac and George Dickson. Mr. H. DREW was second and he showed Mrs. Haworth, Mrs. Wemyss Quin and Dainty in great beauty.

The exhibits of twenty-four vases of decorative Roses were exceedingly beautiful. Messrs. A. WARNER AND SON won the first prize with lovely vases of Isobel, Los Angeles, Betty Uprichard, Hortulanus Budd and Lady Roundhay. Messrs. F. CANT AND CO. in their exceedingly good second prize collection included the varieties Ophelia, Crim-son Emblem, Edith Cavell and Mrs. F. Powell. Mr. ELISHA J. HICKS had the best twelve vases and Messrs. JARMAN AND CO. were second.

AMATEURS' CLASSES.

The Jubilee Trophy for Amateurs was won by Mr. J. W. HART, Potters Bar, with twenty-four particularly good exhibition Roses in such varieties as Gladys Harkness, Dean Hole, Mrs. C. Taylor, and a superb bloom of Candeur Lyonnaise, which was the Silver-Gilt Medal bloom of the section. Mr. F. DENNISON was second in this strong class and he showed Florence Forrester, Mrs. G. Marriott and Marcella in splendid condition.

In the class for growers of fewer than a thousand plants Mrs. HENRY BALFOUR, Oxford, was first with particularly good blooms of Coronation, Mrs. George Marriott and Mildred Grant amongst her twelve specimens. Mr. A. B. PIM was first in the large class for growers of fewer than two hundred and fifty plants and his excellent six varieties included Mrs. C. Lamplough, Mrs. H. R. Darlington and Florence Forrester.

Mr. E. J. BAKER, Westbury-on-Trym, won first prizes in the three remaining classes for exhibition Roses, with very meritorious exhibits, while Mrs. HENRY BALFOUR, who showed lovely blooms of Maman Cochet, White Maman Cochet, and Mrs. HUBERT TAYLOR won chief honours with nine Tea or Noisette varieties. Mr. C. DIXON, Sheffield, had the best two baskets, while the most successful among many exhibitors of a basket of twenty-four stems of one or more varieties was Mr. J. W. HART, who showed excellent blooms of Joanna Bridge. Mr. G. MARRIOTT, Nottingham, had the best basket of twelve blooms, and he was also first with an excellent group in which he placed a lovely basket of Mrs. J. Drew, and had good vases of Mrs. G. Marriott, Mrs. Henry Morse and The Queen Alexandra Rose.

The artistic classes were well contested. Madame Butterfly Rose was used by the chief prize winners in the Amateurs' Classes, where Mrs. COURTNEY PAGE was first with an artistic dinner table decoration and a vase of Roses and second with a bowl of Roses, where Mr. OAKLEY FISHER, who was second in the Dinner Table Class, won the first prize. In the Nurserymen's Class Mr. E. HICKS had the best bowl of Roses and Mrs. A. R. BIDE won the second prize.

WOLVERHAMPTON FLORAL FÊTE.

JULY 14, 15 and 16.—The thirty-third Wolverhampton Floral Fête was held on the above dates, in the beautiful West Hill Park, kindly lent for the occasion, as usual, by the Mayor and Corporation. The show was well up to the usual standard in regard to the general excellency of the exhibits and if the latter were a trifle fewer than usual that was rather an advantage than otherwise as the overcrowding evident on some occasions was avoided.

Four large marquees were necessary to accommodate the show, which included some capital non-competitive displays in addition to the competitive exhibits in eighty-six classes. Liberal awards were provided, the cash prizes alone amounting to over £1,000, besides numerous cups and medals.

West Park is a pleasant place in which to hold a show and it affords ample space for horse-leaping competitions, open-air acrobatic and other performances, firework displays, and two military bands.

The main features of the show were the groups of foliage and flowering plants, the Roses—usually good at Wolverhampton—Sweet Peas, hardy flowers generally, and the decorative classes. The fête is admirably managed by a large general committee of influential local people and the horticultural section is managed by a special committee which continues its good work under the able chairmanship of Mr. F. T. Beck, while Mr. G. W. A. Martin continues to act as general secretary.

Groups.

In the class for a group of miscellaneous plants and flowers, arranged for effect, the premier award of £40 was won by Messrs. JAS. CYPHER AND SONS, Cheltenham, with a very elegant exhibit displayed on a space twenty-five feet by twelve feet. There were three competitors and the Cheltenham firm made a delightful contribution in which they used a double arch as background. In addition to Palms and Bamboos they used a number of brilliantly coloured Codiaeums, tall and graceful Humeas, and fine Dracaenas as the leading foliage plants, while Anthuriums, Fuchsias of the triphylla section, Odontoglossums, Cattleyas, Lilliums and Cypripediums were the principal flowering subjects. The arrangement was unusually light and pleasing. Second prize was won by Sir J. H. KENRICK (gr. Mr. J. W. MacDonald), Whetstone, Edgbaston, with a beautiful arrangement of well grown plants; third, Mr. W. A. HOLMES, Chesterfield, who used many Orchids and bright Codiaeums in his display.

Messrs. J. CYPHER AND SONS were equally successful in the class for a group of foliage plants, and here again they had a very elegant exhibit of Codiaeums, Palms, Ferns, Dracaenas, Alpinias, and Rex Begonias; Sir J. H. KENRICK, second.

For a decorative display of plants and cut flowers, arranged on a table space six feet by four feet, the Cheltenham firm were once again to the fore, winning with a pleasing display of Codiaeums, Lilliums, Odontoglossums, and Origanum Dictamnus; second, Mr. W. A. HOLMES; third, F. E. SANKEY, Esq. (gr. Mr. R. Maybury), Wolverhampton.

In another open class the schedule required a display of one kind only of any flowering plant, but no limit was placed on the number of varieties shown. The space allowed was 60 square feet. There were several competitors and Messrs. J. CYPHER AND SONS secured the first prize with an exhibit of Anthuriums in variety; second, Mr. F. A. SANKEY with Gloxinias; third, Sir J. H. KENRICK with Hydrangeas.

The groups of Begonias were not especially good but MAJOR THORPE's exhibit, from Oaken, was easily the best.

The best amateur's group of Begonias came from Mr. T. H. JUSTICE, Wolverhampton, who was awarded *The Gardeners' Chronicle* medal for a capital display; second, Mr. J. A. HAMPTON, Wednesbury.

From six competitors in the group class open only to amateurs, the first prize of £12 was well won by J. W. SWANSON, Esq. (gr. Mr. F. W. Cooling), Compton, whose exhibit exceeded all others in elegance; he made good use of Humea elegans, Francoa ramosa, Codiaeums and Caladiums; second, T. H. REEVES, Esq. (gr. Mr. W. Clinton), Penn; third, G. MANSON, Esq. (gr. Mr. T. Clark), Penn, whose group contained good examples of Trachelium coeruleum.

The best amateurs' set of twelve flowering plants came from Major THOMPSON, Oaken,

who showed well grown Fuchsias; second, Mr. F. F. SHARPE.

Roses.

There were fewer collections of Roses arranged for effect than last year, but nevertheless the class produced a fine effect, as each exhibitor had to fill a space twenty-four feet by four feet, with a seven-foot high background. The premier award of £20 was won by Messrs. GUNN AND SONS, Olton, with a handsome exhibit of finely coloured blooms. Conspicuous were the pillars of K. of K., Sunstar, Lady Inchiquin, Mabel Morse, and Golden Emblem and the basket of George Dickson; second Mr. J. ROBINSON, Nottingham, who had a fine basket of the effective Lady Inchiquin; third Messrs. W. LOW AND SONS, Beeston, whose exhibit was somewhat weak in the foreground.

For a collection of cut Roses artistically grouped on a table space twelve feet by four feet Messrs. GUNN AND SONS were the leading prize winners with a bright set of fine blooms prettily arranged on pillars and baskets; second, Mr. J. MATTOCK.

Mr. J. MATTOCK won first prize for fine baskets of Roses with a brilliant set of Mrs. H. Bowles, Los Angeles, Golden Emblem, Louis Criner, and Madame Herriot; second Mr. SANDY DICKSON, Dundonald, Co. Down, who included his new Duchess of York which figured so conspicuously at the National Rose Societys' Show at Regent's Park.

A Gold Medal was added to the first cash prize offered for the best set of twelve Roses not put into commerce before 1921, and this important award was won by Mr. SANDY DICKSON, with good flowers of Hawlmark Scarlet, Mabel Morse, Toison d'Or, Lord Charlemont, Betty Hulton, Maud Cuming, G. H. Machereth, Major Bulkeley, Lord Allenby, Princess Victoria, Ethel Somerset and Mabel Fournier; second, Mr. J. MATTOCK, Headington.

The best basket of a light Rose was of Marcia Stanhope, shown by Mr. J. MATTOCK; second, Messrs. HORTON BROS., Wolverhampton, with Ophelia; third, Mr. SANDY DICKSON with Oliver Mee.

For eighteen perpetual flowering Roses, distinct varieties, Mr. J. MATTOCK led, followed by Mr. SANDY DICKSON, while for nine varieties Mr. H. E. FENTON and Mr. J. MATTOCK won as placed.

Mr. L. G. HALLOWES, Wolverhampton and Mr. B. GIBBON, Broadmore, were placed first and second respectively in the class for a dozen Rose blooms staged in boxes.

Sweet Peas.

Weather and other difficulties considered, the Sweet Peas were in fine condition. The leading award for eighteen baskets or vases, distinct varieties, was won by SIR RANDOLPH BAKER (gr. Mr. A. E. Usher), Ranston, Blandford, who had a superb lot of blooms, winning with lovely vases of Miss California, Royal Sovereign, Youth, Rosy Morn, Wembley, Matchless, Wild Rose (very fine), Warrior, Elegance, Hebe, Cerise, Wizard, Picture, Royal Scot, Blue Bird, Constance Hinton, Powerscourt, and Mrs. Arnold Hitchcock; second, Mr. W. E. JOB, Kidderminster; third, Mr. E. H. BURDEN, Tettenhall.

For a dozen vases of Sweet Peas, in as many varieties, not more than twenty stems of each, the competition between SIR RANDOLPH BAKER and Capt. JARRAT THORPE (gr. Mr. W. H. Birches) was particularly close and keen, the former leading by two-and-a-half points. Each showed well and the best bunch in the two exhibits was one of Charming shown by Capt. THORPE; third, Mr. C. WALL, Bath.

Mr. J. WELSH, Wolverhampton, led in the amateurs' class for six bunches of Sweet Peas with very fine blooms of Charming, Powerscourt, Crimson King, Youth, and Royal Purple; second, Mr. J. F. FINNEY, Stone.

Florists' Flowers.

There was only one collection of Lupins and this, from Messrs. HARKNESS AND SONS, Bedale, was awarded the first prize, but the exhibit was not so bright as many we have seen this Yorkshire firm display. Two collections of Delphiniums were staged and the best of these consisted of grand spikes exhibited by Messrs. HEWETT AND CO., Solihull, whose group included several seedlings and fine vases of The Bishop and Coquette; second, Messrs. BLACKMORE AND LANGDON.

Neither of the two collections of Antirrhinums was considered worthy of the first prize, therefore second and third awards only were made and these went, in order of merit, to F. F. SHARPE, Esq. (gr. Mr. T. H. Cotton), Tettenhall; and Mr. F. E. SANKEY.

Two fine collections of cut Carnations, arranged for effect on a space twelve feet by four feet were forthcoming, and there was not much to choose between them, although the first prize set from Mr. C. WALL, Bath, was put up in more elegant fashion than Mr. C. ENGELMANN's and prizes were made in that order. Each showed fine flowers of Laddie.

Hardy Flowers.

On this occasion there was only one exhibitor in the class for an arrangement of hardy border flowers displayed on a space twenty-five feet by seven feet. At some previous exhibitions this class has brought out a very keen competition, but on this occasion Messrs. HARKNESS AND SONS had no competitors and gained the first prize with a goodly collection in which Delphiniums figured extensively with fine Gaillardias, Verbascum (Harkness hybrids, Galega Hartlandii, Lilliums, and Poppies.

Mr. W. PEMBERTON, Broomsgrove, led for a collection of hardy flowers, but in all the four entries the space allowed was not sufficient to display the blooms to advantage, moreover, extremely few items were labelled; second, Mr. G. MASON; third, Mr. D. GREEN, Wolverhampton. All showed well, and the first prize set included some fine spikes of Gladioli. Mr. PEMBERTON was also successful in the class for a dozen bunches of hardy flowers with a capital display of seasonable kinds.

Mr. J. W. LEE led for three vases of hardy garden flowers, the kinds to be chosen from a list given in the schedule; second, Mr. T. H. JUSTICE.

Table Decorations.

In the open class for a florally decorated dinner table, Mr. R. W. HOSIER, Willenhall, won the chief award with a light arrangement of Mme. Butterfly Roses; second, Mrs. A. E. REEVES, with a light and bright design of mixed flowers; third, Mrs. M. DUMBELL, Tettenhall, with Sweet Peas.

In another class, Mr. E. R. LUPTON, Birmingham, won first prize with a mixed arrangement of bright indoor flowers; Mrs. R. W. HOSIER, second with Roses; Mr. CHAS. HOLDER, third, with Sweet Peas, and Sir J. H. KENDRICK fourth, with Gloriosas and Cymbidiums—a rich but rather heavy design.

Vegetables.

A. H. HINCHMAN, Esq. (gr. Mr. J. F. Parker), Cookley, had the best collection of vegetables, and was followed by Mrs. H. S. PITT (gr. Mr. J. Cook), Kingswinford; both showed well. The TETTENHALL DISTRICT ALLOTMENT HOLDERS won the "district" prize for a collection of fruits and vegetables.

NON-COMPETITIVE.

The trade displays were, as usual, very good, and contributed finely to the beauty and attractiveness of the show. The Silver Challenge Cup, value fifty guineas, presented by the Leamington Flower Show Committee for the best non-competitive exhibit was won

by Messrs. BAKER, who, having won it three years in succession, now secure it. Their exhibit took the form of a sunk garden, with surrounding flower borders and a terrace walk, the whole admirably conceived and well executed. The following awards were made:—

Silver Challenge Cup.—To Messrs. BAKERS, Wolverhampton, whose property it now becomes, as they have won it three years in succession.

Large Gold Medal.—To Messrs. BAKERS, for formal garden; Messrs. SUTTON AND SONS, for Sweet Peas and other annuals; Messrs. BAKERS, for floral designs; and Messrs. DOBBIE AND CO., for Roses.

Gold Medal.—To Messrs. BLACKMORE AND LANGDON, for Begonias; Messrs. E. WEBB AND SONS, for Sweet Peas, Melons and vegetables; and Messrs. ISAAC HOUSE AND SON, for Scabious.

Silver Medal.—To Messrs. JARMAN AND CO., for Roses and Dahlias; Messrs. MAXWELL AND BEALE, for alpine plants; Messrs. BOWELL AND SKARRATT, for alpine plants and Acers; Mr. WILLIAM SYDENHAM, for hardy flowers; and to Messrs. SHEPPARDS, Birmingham, for a formal garden.

ROYAL HORTICULTURAL

JULY 14.—The usual fortnightly meeting was held in the Vincent Square Hall, Westminster, on Tuesday last. The exhibition was of an interesting and varied character and provided much the brightest display seen this year, for colour was prominent everywhere, even on the tables where the competitive fruit classes under the auspices of the Fruit and Vegetable Committee of the Kent branch of the National Farmers' Union, were staged.

There were one or two exhibits of Orchids and several collections of Roses, Carnations, Sweet Peas, border Phloxes, and hardy border flowers in variety. An interesting collection of varieties of Cherries was shown by Messrs. BUNYARD AND CO., and a very fine display of these fruits was staged by Mr. T. PATEMAN, Brocket Hall Gardens, in competition for the Bunyard Medal. Several new plants received awards, although not quite so many as at some recent meetings. The weather was gloriously fine and there was a good attendance.

Orchid Committee.

Present: Sir Jeremiah Colman, Bt. (in the chair), Messrs. Gurney Wilson (Secretary), F. J. Hanbury, J. Wilson Potter, E. R. Ashton, T. Armstrong, J. Cowan, H. H. Smith, J. E. Shill, F. K. Sander, H. G. Alexander, S. W. Flory and H. T. Pitt.

AWARD OF MERIT.

Diplomeris hirsuta.—This is Lindley's *Diplochilus hirsutum*, a native of the Himalayas, and having a stature of about four inches, with the foliage almost adpressed on the soil, for it is a terrestrial Orchid. The leaves are some six inches or so long and two-and-a-half inches wide, of a pale green colour and covered all over with very short hairs. The inflorescence arises from the junction of a larger leaf with a smaller one and consists of from two to three white flowers, each subtended by a foliaceous bract. The stalk of the inflorescence is some three inches long. The flower has a curved spur about two inches long, and in general appearance the bloom might be likened to that of a white *Pinguicula*. The bloom measures about an inch-and-a-half across each way; the largest segment is the lip, which is flat and pure white with butter-yellow markings at the part under the column. The exhibitors informed us that the root stock is corn-like and when the plant is at rest it may be quite dried off. Shown by Messrs. SANDERS, St. Albans.

CULTURAL COMMENDATIONS.

Cultural Commendations were awarded to Mr. F. W. THURGOOD, gardener to H. T. Pitt, Esq., Rosslyn, Stamford Hill, for exceptionally fine specimens of *Platyclinis filiformis* (syn. *Dendrochilum filiforme*) and *Odontioda Thiasa* var. *Golden Goddess*. There were four excellent plants of the *Platyclinis*, one with nearly thirty of the long racemes of tiny yellow flowers. The plant of *Odontioda* was carrying a magnificent branched spike of some thirty to forty flowers. The other Cultural Commendation was awarded to Mr. LYNE, gardener to J. J. Bolton, Esq., Claygate Lodge, Claygate, for a plant of *Brasso-Laelio-Cattleya Jupiter* var. *Mrs. Stewart*. The blush sepals and petals are of the largest size and contribute to a flower of excellent shape, but the chief glory is the beautiful lip which is blush, like the sepals and petals, in the upper part, the lower half being rich mauve overlaid with carmine and with a gold suffusion in the interior.

GROUPS.

H. T. PITT, Esq., showed a small miscellaneous group in which his specimens of *Platyclinis filiformis* and the fine *Odontioda Thiasa* var. *Golden Goddess* were conspicuous features. At the back of the group such tall growing subjects as *Thunia Veitchiana* and *Dendrobium Phalaenopsis* were arranged against a background of Palms. *Cattleya gigas* Mrs. E. Ashworth was shown well in bloom and there were fine examples of *Cypripedium Maudiae*, *C. glaucophyllum*, *Miltoniodes Harwoodii*, and *Cattleya Eleanora*, but as equally interesting as these imposing Orchids were the smaller flowered *Habenaria rhodocheila*, and the dainty blue-flowered *Dendrobium Victoria Reginae*.

J. J. Bolton, Esq., exhibited a group noteworthy for the fine quality of the plants, which were principally *Odontoglossums*, *Odontiodas*, and *Cattleya gigas*, together with the magnificent *Brasso-Laelio-Cattleya Jupiter* var. *Mrs. Stewart* already referred to. Conspicuous amongst the *Odontiodas* was *O. magna rubra*, which received a First Class Certificate in 1921, and *O. Gwendoline* (eximium × *Madeline*). Of the *Odontoglossums* special mention may be made of *O. Faustina* Claygate Lodge variety, *O. Gorizia* variety *Imperial Purple* (Jasper × *President Poincaré*), *O. Eclipse* (Agloan × *Thais*), *O. Llewelyn*, and a fine albino *O. crispum* with a few yellow and brown markings on the lip.

Messrs. SANDERS staged a miscellaneous collection including *Cattleyas*, *Brasso-Cattleyas*, *Cypripediums*, *Masdevallias*, *Odontiodas*, *Odontoglossums* and *Miltonias*. New plants were shown in *Cypripedium Godefroyae* var. *Joy Sander*, a variety with cream-white segments slightly spotted with rose, and *Brasso-Laelio-Cattleya Plumion* with chrome sepals and petals and rich cerise interior to the lip, which is pleasingly fimbriated. A grand clump of *Epidendrum Parkinsonianum* with eight blooms; *Odontioda Chantclier*; *Miltonia Butterfly*, with four exceptionally fine spikes of many flowers each, and *Dendrobium Victoria Reginae* var. *atro-caerulea*, perhaps the most dainty of all the Orchids at the exhibition, are other subjects of interest.

Messrs. BLACK AND FLORY showed *Miltonia Viola*, *M. vexillaria Sultan*, *M. Celia*, and *Brasso-Cattleya Elia*, the last with a very handsome lip of rosy-purple colour veined with orange and gold.

Floral Committee.

Section A.—*Present*: Messrs. H. B. May (in the chair), H. J. Jones, J. M. Bridgeford, Jas. B. Riding, W. H. Page, F. G. Cousins, F. Streeter, H. R. Darlington, D. Ingamells, Chas. E. Pearson, D. B. Crane, G. W. Leak, W. P. Thomson, A. Turner, and Wm. Howe.

Section B.—*Present*: Messrs. W. J. Bean (in the chair), Gerald Loder, J. Reuthe, E. H. Wilding, W. B. Cranfield, Reginald

Cory, A. Bedford, G. Yeld, F. G. Preston, E. A. Bowles, R. C. Notcutt, and R. D. Trotter.

AWARDS OF MERIT.

Hemerocallis Radiant.—Another grand Day Lily raised by Mr. George Yeld, of Gerrards Cross. The largest flower was five inches across at the mouth and clear orange-yellow. The blooms stand out conspicuously, the inflorescence being lax and not so dense as in the ordinary type of Day Lily. Shown by Mr. GEORGE YELD.

Nepeta Paul Chandon.—Although the origin of this showy plant was not given, it is obviously a hybrid. The flowers, which are coloured a beautiful pale lavender with a deeper coloured tip to the lip, are as large as those of *Nepeta macrantha*, but the foliage more resembles that of *Scutellaria galericulata*. The specimen was exhibited in a pot, but it is obviously a good border plant and grows about one-and-a-half foot high. Exhibited by Mr. F. G. Wood, Marsden Nursery, Ashted.

Salvia dichroa.—This is an old garden species and was figured in *Bot. Mag.* t. 6004, 1872. The colour development is curious, for in the bud stage many of the flowers are pure white, and apparently not until they are open fully does the rich mauve tone develop; the lip remains pale. The specimens shown were about two to three feet tall, comprising stout-branched flowering shoots bearing very long flower spikes and sessile, amplexicaule foliage, deeply incised, from six to eight inches long, and ovate-lanceolate in shape. Shown by the ROYAL BOTANIC GARDENS, Cambridge.

Hoya bella.—This also is another old garden plant, figured in *Bot. Mag.* t. 4402, and introduced by Lobb in 1848. It has been described as the most lovely of all the Hoyas and never before have we seen this beautiful plant grown to such perfection. The flowers are developed on the undersides of the stems and are white, waxy in texture and stained on the staminal crown with deep purple. Shown by Messrs. L. R. RUSSELL, LTD., Richmond.

Pistorinia intermedia.—*Pistorinia intermedia* is now known as *Cotyledon hispanica*. It was introduced from Spain and Barbary so long ago as 1796. The stems are somewhat straggling, succulent, and bear sub-terete, oblong leaves like those of a *Sedum*. The inflorescence is composed of a number of corymbs of sulphur-yellow flowers, exquisitely marked with red dots along the centre of the petals which have a red spot on their tips, and are stained with red on the undersides. Shown by L. JOHNSON, Esq., Hidcote Manor, Campden, Gloucestershire.

Rose Dainty Bess.—This beautiful Rose received the National Rose Society's Gold Medal on July 3 and is described on p. 35. The flowers seemed even better than when shown under canvas at Regent's Park, and they were the admiration of all who saw them. Shown by Mr. W. E. B. ARCHER, Monks Norton, Sellindge, Ashford, Kent.

GROUPS.

No doubt in view of the annual show of the National Carnation and Picotee Society which was held in the hall, the trade growers of Carnations had rather larger collections than usual. Mr. C. ENGELMANN staged a lovely vase of his new Red Laddie which was of very bright colouring. He also showed Eileen Low, Benora and Laddie. In addition to their customary varieties of greenhouse Carnations and a selection of *Dianthus Allwoodii*, Messrs. ALLWOOD BROS. displayed Border Carnations in such varieties as Bookham Clove, Lord Steyne, Akbar, Elizabeth Shifner and Mrs. G. Marshall.

Amongst the many excellent Border Carnations set up by Mr. JOHN R. CROWHURST were Mary Murray, a splendid yellow self, J. Saville, an apricot-ground

fancy, marked with lavender and rose; Steerforth, a very large and fragrant white ground fancy and Rose Clove, another especially fragrant variety. Amongst the older varieties were Bookham Clove, Elaine, Mrs. G. D. Murray and Salmon Clove. A large collection of his very charming garden Pinks was staged by Mr. G. HERBERT. Of his many valuable varieties we greatly admired Queen Mary, rosy pink with a deep crimson base; Sweet Nell, soft rose, deeper coloured in the centre; Comedy, rosy mauve; May Queen, bright pink self and Ruby, of rich colouring.

The excellence of the exhibits of Sweet Peas augurs well for the success of the annual show of the National Sweet Pea Society later in the week. Messrs. DOBBIE AND CO. had an extensive collection of great merit in which there were charming vases of Grenadier, Mrs. A. Hitchcock, Royal Purple, Charming, Mrs. Tom Jones and Dobbie's Cream. Messrs. A. BIDE AND SONS showed several of their novelties as well as a selection of standard varieties. Their chief vases were of Bide's Cream, Farnham Lavender, Fair Lady and Charming. A smaller collection, though of decided merit, was arranged by Mr. A. BLANDFORD, a fresh exhibitor of the flower in London. His very best stands were of Jean Ireland, La France, Constance Hinton, and Charming.

Immediately inside the entrance Mr. H. J. JONES arranged a large collection of the herbaceous Phloxes he grows and shows so well. At each end of the long oval group a tall stand filled with excellent Delphiniums added to its attractions. Of the many varieties of Phlox, Fascination, purple; Abel Tasmain, white, with a lilac eye; Mrs. H. Ward, lilac, with a rosy eye; Rhinelander, rose-pink; Mrs. Bedford, deep pink, and Snowdrift, were excellent.

An attractive rockery, built by Mr. F. G. WOOD, contained *Jasione perenne*, *Veronica spicata* nana and *Scutellaria hastata*, three good blue flowers of dwarf habit, while amongst his many border flowers the new *Nepeta Paul Chandon* was very prominent. Messrs. R. TUCKER AND SONS, had in their rockery dainty little plants of *Ranunculus alpestris*, *Primula hirsuta*, and *Nierembergia rivularis*.

In addition to a good selection of hardy herbaceous border plants and alpinists Mr. G. REUTHE had an interesting collection of *Lilium* chiefly of *L. testaceum*. *Lavatera Olbia rosea* was prominently shown by Messrs. LADHAMS, LTD., who also included *Sidalcea Mauve Queen* and *Erigeron Violetta* in their exhibit. Mr. C. DICKSON showed a small rockery and the Misses HOPKINS contributed a seasonable selection of border flowers.

Achillea Eupatorium, Phloxes, *Alströméria aurantiaca*, *Erigerons* and *Monarda Cambridge Scarlet* were prominent in a good collection set up by the CHALK HILLS NURSERY CO. In an interesting exhibit Messrs. M. PRICHARD AND SONS included *Crinum Powelli* *Haartemensis*, *Iris Kaempferi* and *Kniphofias Rouge* and *Souffre*. Herbaceous Phloxes, especially the varieties *Europa*, pale blush with rosy eye; *W. Scholter*, deep pink; and *Evelyn*, rosy pink, were shown by Messrs. WATERER, SONS AND CRISP.

Very good Delphiniums were displayed by Messrs. KELWAY AND SON. Their chief varieties were *Smoke of War*, *Dusky Monarch*, *Countess of Ilchester*, *Canopus* and *Decorator*. Mr. T. CARLILE showed *Evelyn Cole*, *Betty*, *Coquette*, *Blue Queen*, *Elsa*, and other good Delphiniums. Messrs. RICH AND CO. included Delphiniums with other border flowers.

An exceedingly interesting exhibit of *Paeonies* was made by Mr. W. ORMISTON ROY. Many good single and double varieties were represented in very fresh and bright condition and we understand the flowers were sent from Canada in cold storage.

An especially good exhibit of *Violas* was made by Mr. W. YANDELL. A large number of varieties were included. Amongst those

of yellow colour were *Moseley Sunrise*, *Bullion*, and *Master Banks*.

In the Orchid Annexe Messrs. L. R. RUSSELL, LTD. had a graceful group of well grown stove and greenhouse plants which included *Bougainvillea* Mrs. Butt, *Hoya bella* and various *Crotons* and *Dracaenas*.

A pretty group of *Lilium Duchartrei* var. *Farreri*, was exhibited by Lt.-Col. MESSEL (gr. Mr. Coomber), Nymans, Handcross.

There were several collections of particularly good Roses in the Hall. Messrs. CHAPLIN BROS. included *Lady Inichiquin*, Mrs. Henry Bowles and *Betty Uprichard* in their very attractive collection. *Souvenir de George Pernet* and *Lord Charlemont* of vivid colouring were prominent varieties in the well arranged display of Mr. WALTER EASLEA. Single-flowered varieties were freely shown by the Rev. J. H. PEMBERTON who had lovely stands of *Mermaid*, *Pax* and *Vanity*. Mr. T. P. EDWARDS staged goodly vases of *Etoile de Holland*, *Hawlmarm Crimson* and other useful varieties.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (Chairman), J. Cheal, P. C. M. Veitch, Geo. F. Tinley, A. Bullock, A. Metcalfe, S. B. Dicks, W. Giles, T. Pateman, J. Wilson, H. V. Taylor, E. Laxton, W. G. Lobjoit and A. N. Rawes.

The principal exhibit before this committee was a collection of thirty-two varieties of Cherries shown by Messrs. G. BUNYARD AND CO., LTD. Varieties common in cultivation, such as *Bigarreau Napoleon*, *Elton Heart*, *Waterloo*, *White Bigarreau*, *Black Tartarian*, *Governor Wood*, and *Early Rivers* were exceptionally good and there were also splendid fruits of *Noir de Guben*, *Black Bohemian*, *Noir de Schmidt*, a fine black Cherry; and *Grotte Precoce*, a transparent, pale red fruit; also fruits from a Cherry tree raised from scions brought over by Mr. G. P. Baker twenty years ago from Isparta, two hundred and fifty miles inland of Smyrna. They were very fine fruits of the Black Circassian type. Probably the pick of the collection were the fruits of *Early Rivers* variety.

A very attractively arranged exhibit of Strawberries and Currants was shown by Messrs. LAXTON BROS., Bedford. Great prominence was given to *Perfection Red Currant* and bunches of this variety were shown with as many as twenty-eight berries; in the opinion of many this is the finest Red Currant in cultivation. They had their new *Black Currant The Raven* and excellent fruits of *Omega* and *Rearguard Strawberries*.

The only exhibit entered for the Bunyard Medal for Cherries was shown by Sir CHARLES NALL-CAIN, Brocket Hall, (gr. Mr. T. Pateman), whose exhibit was most praiseworthy and comprised the varieties *Noble*, *May Duke*, *Elton Heart*, *Bigarreau Napoleon*, *Bedford Prolific*, *Bigarreau Florence*, *Bigarreau Frogmore Early*, *Black Heart*, *Schrecken Bigarreau*, *Black Eagle* and *Tartarian Black*.

Messrs. DANIELS, Norwich, exhibited Raspberries, Gooseberries, and Currants, the latter including *Black Currant September*, to show the late ripening of this variety, for the berries were still green.

Messrs. W. SEABROOK AND SONS showed Gooseberries *Careless* and *Whinham's Industry* and Currants *Seabrook's Black*.

Mr. G. DAVIDSON, gardener to Col. B. T. PETRE, Westwick, Norwich, showed *Black Currants Davidson's Eight*, which is included in the Commercial trial of fruits at Wisley.

CHAMBER OF HORTICULTURE.

THE Sixth Annual General Meeting of the Chamber of Horticulture was held on the 5th inst. at 18, Bedford Square, London, W.C.1. The President, Mr. W. R. Oldham, presided, and others present included:—Messrs. Geo. Monro, G. W. Leak, W. H. Brown (Cooper Taber and Co.), C. Engelmann, W. H. Page and R. Thomas (Chamber of Horticulture),

Mr. J. S. Brunton (Florists' Telegraph Delivery Association), Mr. Chas. H. Curtis (British Florists' Federation), Mr. E. C. Boughton (Federation of British Growers), Mr. C. G. L. Du Cann (Horticultural Trades' Association), Messrs. S. Austin Smith and W. Sheldon (N.W. Kent Growers' Association), Mr. H. H. Wardle (*Fruit Grower*), Miss Rogers (*Nurseryman and Seedsman*), and Mr. S. W. Hale (Secretary).

The minutes of the fifth annual general meeting were read and confirmed, after which the President addressed the meeting. He briefly summarised the work done during the year and repeated what he said at the previous meeting with regard to the benefits of co-ordination and co-operation. Each succeeding year showed the necessity for this. He was quite sure that many matters must affect traders as a whole and therefore it was imperative that each section as joined together in the Chamber should do its best to assist the Chamber's progress. He referred to the improved financial position and also to the sterling good work done by the various Committees and tendered his hearty thanks to all the officers and members who had assisted him during his year of office.

The annual report was then submitted to the meeting and adopted, together with the annual accounts and balance sheet, which show steady financial improvement.

Mr. Alfred W. White was unanimously elected as President to succeed Mr. W. R. Oldham. Unfortunately Mr. White was unable to be at the meeting. Both Mr. Oldham and Mr. Leak referred to Mr. White's abilities as a business man and his knowledge of horticultural organisation. He had already filled the offices of President of the British Florists' Federation and President of the Spalding Bulb Growers' Association and would undoubtedly occupy the Presidential Chair of the Chamber with success. (A portrait of Mr. White is given on p. 42).

The following appointments were then made:—Vice-Presidents: Messrs. H. O. Larsen, Joseph Rochford, W. E. Wallace and Geo. Sawyer re-elected, and Messrs. C. Engelmann and Chas. E. Pearson, V.M.H., added.

Auditors:—Messrs. George Copley, Kay and Co.

Honorary Treasurer:—Mr. Pearson, on account of health, having resigned this office, it was unanimously agreed to ask Mr. W. E. Wallace, J.P., to fill the office of Honorary Treasurer.

Parliamentary Committee:—Messrs. G. W. Leak, G. H. Barr, Geo. Monro, H. O. Larsen, F. W. Ladds, W. R. Oldham, John Harrison, junr., E. C. Boughton and C. G. L. Du Cann. This Committee has power to co-opt additional members as thought fit.

Technical Committee:—Messrs. R. Seymour Copley, C. H. Curtis P. J. Fryer, T. Parker, W. P. Seabrook, P. J. Murrell, C. Engelmann, Milton Hutchings and R. Sandwith. This Committee has power to co-opt additional members as thought fit.

Council representatives of Private Members:—Messrs. G. H. Barr, W. H. Page, F. R. Ridley, C. Engelmann, W. Nutting, Milton Hutchings, Col. H. R. Fletcher and Mr. R. Thomas.

The meeting terminated with a hearty vote of thanks to Mr. Oldham for his work during the past year.

HANLEY FLORAL FÊTE.

THIS Society made a special effort this year to bring the show back to the very high position it once held. The exhibition, which was held on the 1st and 2nd inst., showed a great improvement on that of last year, and was undoubtedly the best show held since the war, both from a competitive point of view and the quality of the exhibits. The keen interest taken by the civic authorities, including the Mayor, augurs well for the future success of the Show, and the general opinion was

that the Town Council would continue to encourage and support the Society. Owing to having to leave the show early I am unable to give a full list of the prizes awarded.

There was very keen competition in the Sweet Pea classes, and all the local classes, especially the two for table decorations.

Liberal prizes were offered for groups of miscellaneous flowering and fine foliage plants, and exhibits of these were well shown by Messrs. J. CYPHER AND SONS and Mr. W. A. HOLMES, who were placed in the order named. Trade exhibits have never been finer at this show. Messrs. JAMES CARTER AND Co.'s exhibit of vegetables was one of the best ever seen at Hanley and was not only awarded a large Gold Medal but the Shirley Silver Challenge Cup, valued at thirty guineas and offered for the best exhibit in the show. Gold Medals were awarded to Messrs. ED. WEBB AND SONS for Sweet Peas; Messrs. BAKERS, Wolverhampton, for herbaceous flowers, and Mr. F. G. WOOD, for alpine and choice plants. F. J.

Obituary.

Thomas Lunt.—It is with deep regret that we have to record the death, on July 4, at his residence, Woodhatch, Bridge-of-Allan, of Mr. Thomas Lunt, well-known throughout the country as the gardener at Keir, Perthshire, and a noted exhibitor and judge for a number of years at the leading shows. Mr. Lunt was for many years gardener to the family of the Stirlings of Keir, but retired a few years ago to Bridge-of-Allan, where he had purchased a house and garden. Mr. Lunt's gardening career was a highly successful one. Reared in a gardening atmosphere, he became, after taking charge of Keir gardens a number of years ago, a noted exhibitor, his chief successes being with Chrysanthemums and Grapes, in which he obtained many of the highest honours at the Scottish exhibitions and elsewhere. He carried off many of the chief Trophies of the Royal Caledonian Horticultural and other Societies, honours well gained by the grand quality of his exhibits. Mr. Lunt was a valued contributor to this journal, and during more than one year he contributed notes on the "Week's Work." Under his care the gardens at Keir were maintained in the highest perfection. Among his latest tasks at Keir was the formation and planting of a beautiful rock garden where the natural rock was skilfully supplemented by other work so admirably planned that it could not be detected where the original and the added rocks became connected. After the long service Mr. Lunt, much to the regret of his employer, Commander Stirling, decided to retire, but, unfortunately, he has not lived long to enjoy his retirement. He was very highly esteemed, and a large company attended his funeral at Logie Churchyard on July 8.

William Shingler.—The passing away of Mr. William Shingler on June 29th, at the age of 83 will be deeply regretted by all who had the pleasure of his acquaintance. He was 35 years gardener to Lord Hastings at Melton Constable Park, Norfolk, and so faithfully did he serve his employer during that long period that on his retirement in 1916, as a mark of appreciation, his lordship granted him a pension and a cottage on the estate wherein to enjoy the evening of his life in comfort. He was a native of Shropshire and served in several well-known gardens before being appointed gardener at Brogyntyn Hall, Oswestry, where he commenced a most successful career as an exhibitor, securing many important prizes for fruits and stove plants. Although Mr. Shingler was a very clever and capable allround gardener his speciality was Grape growing, and the almost sensational success that he gained at

Shrewsbury in the years 1902-07 in the Champion Class for Grapes will be remembered by many. His first attempt was awarded premier honours. The following year his exhibit was placed second. The next year found him fully prepared and again his exhibit was placed first, but here he received yet another and more unfortunate set back in his efforts to win the Cup outright. The death of the late Lord Hastings occurred in September 1904, and the rules of the society necessitate the winning of the Challenge Cup three years under the same employer. Whether this was the correct interpretation of the rules was not clearly understood and although Mr. Shingler was strongly advised to contest the decision, he abided by the Society's ruling and made determination to win the Cup outright. This he accomplished in the three years that followed. Mr. Shingler raised several new varieties of Grapes, the best of these being Lady Hastings, which was awarded a First-Class Certificate by the R.H.S. Fruit and Vegetable Committee in 1899. Mr. Shingler was also very successful at other shows, notably Norwich and the R.H.S., and he was the proud possessor of a handsome silver cup which was presented to him by the late Lord Hastings, in 1904, as a memento of the honours gained by his exhibits up to that time. This famous old gardener was a man of noble character, and he was esteemed by all who knew him, for he was of a gentle and courteous nature, always ready to do good to his fellow men. He was most unassuming and reticent concerning himself, but ever ready to acknowledge and acclaim the success of others. He was devoted to his profession even up to the last day of his life. His remains were conveyed to St. Peter's Church, Melton Constable, by the garden horse and cart, assisted by the estate gardeners and laid to rest in a grave, decorated with flowers and vines, in the midst of the surroundings he loved and served so well—truly a fitting last tribute to a clever and devoted gardener. He was pre-deceased by his wife in 1922; he leaves three sons and one daughter.

James Ward.—East Anglian gardeners will be sorry to learn that Mr. James Ward died on Friday, July 3, at Old Connaught, Bray, where he had been staying for the benefit of his health. For a number of years he was Superintendent of Parks at Norwich, where he delighted the citizens and visitors alike with his wonderful bedding displays. He was an artist in gardening and was widely known for his interesting and instructive contributions to the press. He was an arboriculturist of no mean repute, and had often been complimented on his descriptive articles of famous trees growing on leading estates which he had visited in England, Ireland, and Wales. Previous to going to Norwich he was gardener and forester to Lord Dunleath, Ballywalter Park, Co. Down; Sir Humphrey de Trafford, Hill Crest, Market Harborough; and The Hon. Percy Allsopp, Battenhall Mount, Worcester. The interment took place on the 6th inst. at the beautiful cemetery of Enniskerry, Co. Wicklow. Mr. Ward was seventy-six years of age, and in his younger days was well known for his great strength; he possessed a remarkably fine physique and stood 6 feet 3½ inches in his bare feet. He was beloved by all who knew him, having a most loving disposition and engaging personality. He leaves a widow, four sons, and three daughters, his eldest son, Arthur, being the Parks Superintendent at Shrewsbury.

CATALOGUES RECEIVED.

HURST AND SON, 152, Houndsditch, E. 1.—Bulbs (Wholesale).
J. CARTER AND CO., Raynes Park, S.W. 20.—Seeds for May to September sowings.
T. SMITH, Daisy Hill Nursery, Newry.—Bulbs, etc.

ANSWERS TO CORRESPONDENTS.

BRIAR SEEDS: J. A. K. It is probable that your wild Rose seeds will germinate next year. It is not unusual for such seeds to lie dormant for a year or more. All that you can do is to allow the seeds more time to germinate.

CORRECTION. In the reply to H.D. p. 40 re bitter Cucumber fruits "top-dress your beds with a compost of lime and stable manure mixed in equal proportions," should read "loam and stable manure."

DISEASED ARUM LILIES: W. R. The rotting of Arum corms is due to the presence of *Bacillus aroidae*. Plants, after they have been allowed to dry off, should be removed from the pots and have all the soil shaken from them. The corms should then be washed and all infected parts cut out with a sharp knife, sterilising the knife blade by dipping it in boiling water after each corm has been so treated. The corms should then be placed for four hours in a two per cent. solution of formaldehyde, made by mixing one part of forty per cent. formaldehyde with forty-nine parts of water. It is advisable to sterilise both pots and soil for re-potting the treated corms.

FIGS FAILING TO RIPEN: From the brief description you give of your Figs failing to ripen, it would appear they are suffering from a lack of lime in the soil and also from a sour compost, especially if they are old trees. Examine the border and correct the drainage in the autumn, and incorporate more lime rubble in the compost. Remove all unhealthy roots and bring others nearer the surface, laying them in new compost. Do not pinch the shoots later than the middle of June; thin the fruits early, that is, remove all small and deformed fruits and allow three good ones on each shoot. Overcropping and allowing the trees to continue bearing long after they should be at rest are among the chief causes of so many fruits dropping in the spring.

HOLLIES AND LAURELS DYING: C. L. Your Laurels appear to have died from root trouble although there was nothing about the soil that would account for the death of the plants. If the ground has been flooded at any period within the last year or two it would be likely to cause the death of the roots. However, it is not unusual for Laurels to die rather suddenly or for branches to die. All we can suggest is that you should not plant Laurels on the ground where the plants have died for at least three or four years unless new soil can be provided, because fungus from the roots may be present in the old soil.

NAMES OF PLANTS: E. G. 1. Specimen too scrappy for identification, probably *Potentilla* species; 2. *Berberis nepalensis*; 3. *Deutzia crenata*; 4. *Spiraea discolor*; 5. *Cornus alba* var. *sibirica variegata*; 6. *Cotoneaster Simonsii*; 7. *Chlorophytum elatum variegatum*; 8. *Koeleruteria paniculata*. F. T. 1. *Pyrus intermedia*; 2. *Cryptomeria japonica*; 3. too small to identify; 4. *Juniperus chinensis*; 5. *Cupressus sempervirens*; 6. *Cassinia fulvida*; 7. *Cornus glabrata*; 8. *Kalmia latifolia*; 9. *Cephalotaxus pedunculata*; 10. *Spiraea japonica* var. *alba*; 11. *Philadelphus Lemoinei* var. *erectus*; 12. *Philadelphus purpureo-maculatus*.

Communications Received.—D. K. M. and R. F. (Thanks for 2s. 6d. for R.G.O.F. Box).—J. F.—G. H. D.—F. J.—E. L.—F. A. H.—E. B.—E. J. B.—W. R. C.—P. T. M.—F. W. J.—A. S.—T. H.—W. F. B.—T. F.—J. R. C.—Polesden.—A. M.—T. D.—G. W. C.—Brynteg.

MARKETS.

COVENT GARDEN, Tuesday, July 14th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.: Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Hydrangea	s. d. s. d.
cuneatum		Pink, 48's per	
per doz.	10 0-13 0	doz.	18 0-24 0
—elegans	10 0-12 0	—Blue, 48's per	
Aralia Sieboldii	9 0-10 0	doz.	30 0-48 0
Araucaria, per		Marguerites, white,	
doz.	30 0-42 0	48's per doz.	15 0-18 0
Asparagus plu-		Mignonette, 48's	
mosus	12 0-18 0	per doz.	15 0-18 0
—Sprengeri	12 0-18 0	Nephrolepis, in	
Aspidistra, green	36 0-60 0	variety	12 0-18 0
Asplenium, per		—32's	24 0-36 0
doz.	12 0-18 0	—30's	30 0-48 0
—32's	24 0-30 0	Pteris, in variety	10 0-15 0
—nidus	12 0-15 0	—large 60's	5 0-6 0
Cacti, per tray,		—small	4 0-5 0
—12's, 15's	5 0-7 0	—72's, per tray	
Crassulacae, 48's per		of 15's	2 6-3 0
doz.	24 0-30 0	Verbenas, 48's,	
Crotona, per doz.	30 0-45 0	per doz.	12 0-15 0
Cyrtomium	10 0-25 0	Viscaria, 48's,	
Hydrangea		per doz.	15 0-18 0
White, 48's per			
doz.	18 0-30 0		

Cut Flowers, etc.: Average Wholesale Prices.

Achillea, per doz.	s. d. s. d.	Iceland Poppies	s. d. s. d.
bun.	4 0-6 0	Iris, English per	2 0-3 0
Adiantum deco-		doz. bun.	
rum, doz. bun.	9 0-10 0	—Blue	12 0-15 0
—cuneatum, per		—Maive	12 0-15 0
doz. bun.	6 0-8 0	—White	12 0-15 0
Aistræria, per		Lapageria, per	
doz. bun.	6 0-8 0	doz. blooms	3 6-4 0
Asparagus plu-		Lilium longiflorum	
mosus, per bun.		long, per doz.	2 6-3 0
long trails, 6's	2 0-3 0	—speciosum	
med. sprays	1 6-2 6	album, long, per	
short	0 9-1 3	doz.	3 6-4 0
—Sprengeri, per bun.		short, per doz.	3 0-4 0
long sprays	1 6-2 0	—speciosum	
med.	1 0-1 6	rubrum, long,	
short	0 4-1 0	per doz. blooms	4 0-5 0
Asters, white, per		—short	3 0-5 0
doz. bun.	9 0-15 0	Lily-of-the-Valley,	
Carnations, per		per doz. bun.	24 0 30 0
doz. blooms	1 0-2 6	Orchids, per doz.	
Chrysanthemum		—Cattleyas	24 0-36 0
maximum, doz.		—Cypripediums	5 0-7 0
bun.	4 0-5 0	Roses, per doz.	
Coreopsis, per doz.		blooms, Rich-	
bun.	1 6-2 0	mond	1 6-2 6
Cornflower, per		—Liberty	1 6-2 6
doz. bun.	2 0-2 6	—Madame Butter-	
Croton leaves,		fly	1 6-2 6
var. doz. leaves	0 9-2 6	—Mme. Abel	
Delphiniums, var-		Chatenay	1 6-2 6
ious, per doz.		—Melody	1 6-2 0
spikes	2 0-3 0	—Molly Sharman	
Fern, French, per		Crawford	2 0-2 6
doz. bun.	0 9-1 0	—Ophelia	2 0-2 6
Gaillardia, per		—Sunburst	2 0-3 0
doz. bun.	4 0-5 0	Scabiosa caucas-	
Galax, American,		ica, per doz.	
green and bronze,		bun.	5 0-6 0
per doz. bun.	— 1 0	Smilax, per doz.	
Gardenias, per		trails	3 0-3 6
box, 12's, 18's	6 0-12 0	Statice, mauve	6 0-12 0
Glaudiolus, Bluah-		—yellow, per doz.	
ing Bride, per		bun.	6 0-9 0
doz. bun.	12 0-15 0	—white, per doz.	
—White, per doz.		bun.	6 0-9 0
bun.	12 0-15 0	—pink, per doz.	
—primulinus, per		bun.	6 0-9 0
doz. spikes	2 6-3 0	—Sunworili, per	
—Halley, per doz.		doz. bun.	8 0-12 0
spikes	4 0-5 0	Lavender, per doz.	
—Prince of Wales,		bun.	9 0-15 0
per doz. spikes	5 0-6 0	Stephanotis, per	
—Scarlet, per doz.		72 pips	2 6-3 0
spikes	5 0-6 0	Stock, English	
—Cream per doz.		white	8 0-10 0
spikes	5 0-6 0	Sultan white, per	
—Giant White, per		doz. bun.	5 0-8 0
doz. spikes	4 0-5 0	—mauve, per doz.	
Gypsophila, per		bun.	5 0-8 0
doz. bun.	9 0-12 0	—yellow, per doz.	
Heather, white,		bun.	5 0-8 0
per doz. bun.	9 0-12 0	Sweet Peas, per	
—pink, per doz.		doz. bun.	4 0-9 0
bun.	8 0-9 0	Violas, per doz. bun.	1 0-1 6

REMARKS.—Business has been somewhat dull during the past week and the general supplies have been equal for all requirements. Prices are much easier, especially for Carnations, supplies of which exceed the demand and

only best quality blooms are valuable. Roses fluctuate in price according to the quality and condition of the blooms when they reach the market. Lavender is the latest arrival in this department, but there is no particular demand for it at present although the quality is fairly good. Asters are increasing in quantity but only white blooms are available at the present time.

Fruit: Average Wholesale Prices.

Apples—per case	s. d. s. d.	Grape Fruit,	s. d. s. d.
New Zealand—		—Florida, finest...	45 0-55 0
—Sturmer...	17 0-18 0	—South African,	
—Rokewood...	16 0-19 0	per case...	30 0-40 0
Tasmanian—		Lemons, Messina,	
—Sturmer...	15 0-16 0	per box...	12 0-15 0
—Others...	14 0-15 0	—Murcia...	16 0-22 6
Bananas...	15 0-25 0	—Naples...	20 0-30 0
Cherries, White,		Mandarines...	5 0-6 0
English...	5 0-10 0	Melons (Forced)	3 0-6 0
—Black, English...	8 0-16 0	—Cantaloupes...	5 0-12 6
—Napoleon...	16 0-20 0	Nectarines, per	
Cherry Plums, per		doz.	9 0-24 0
box	12 0-14 0	Oranges, Jaffa...	16 0-18 0
Currants, Black,		—Spanish—per case	
English per lb.	0 6½-0 7	—300's...	25 0-35 0
French...	0 5½-0 6	—380's...	25 0-35 0
—Red, ½-sieve	5 0-8 0	—50's...	20 0-30 0
Gages, Spanish,		—South African,	
½-sieve...	10 0-16 0	per case...	24 0-27 6
Gooseberries,		Peaches, English	
cooking berries		per doz.	9 0-24 0
per ½ sieve	4 0-6 0	Pines...	5 0-8 0
—dessert berries,		—South African	
per lb.	0 3-1 3	box	6 0-7 0
Grapes...		Plums, Spanish,	
—Alicante, per lb.	1 6-2 6	per crate	6 0-10 0
—Belgian...	1 9-2 0	Raspberries—	
—English...		dessert, per lb.	0 9-1 0
—Hambro, per lb.	1 6-3 0	3 lb. chips	1 6-2 0
—Muscat...	3 0-8 6	Spanish Apricots—	
—Canon Hall...	5 0-12 0	per crate	12 0-14 0
Grape Fruit,		Strawberries,	
Cuban...	40 0-42 6	chips	1 6-3 0
—Jamaica...	40 0-42 6		

Vegetables: Average Wholesale Prices.

Beans, Guernsey,	s. d. s. d.	Marrows, doz.	s. d. s. d.
per lb.	0 6-1 0	Onions—	
—Worthing...	0 6-1 0	—English, per cwt.	12 6-14 0
Beets, new, per		—Spring per doz.	6 0-7 0
doz. bun.	3 0-4 0	Parasols, per cwt.	6 0-8 0
Broad Beans, per		Peas, Yorkshire,	
bushel	6 0-8 0	per bag	15 0-16 0
Cabbage, per tally	10 0-15 0	Potatoes, per ton—	
Canary Island		—English, per	
Tomatoes	16 0-21 0	bushel	3 0-5 0
Cauliflowers, per		—Canary Island,	
doz.	2 0-4 0	case	6 0-10 6
Carrots, new, per		—St. Malo, per	
doz. bun.	8 0-10 0	cwt.	6 0-10 0
Cucumbers, per doz.	4 0-5 0	Rhubarb, per doz.	6 0-7 0
—Flata, 36's, 42's	12 0-14 0	Spinach, "New	
Dutch Onions	11 0-12 0	Zealand," per	
Endive, per doz.	2 6-3 0	lb.	— 0 6
Greens, best, per		Tomatoes, English,	
bag	4 0-5 0	per lb.—	
Horseradish, per		—Pink	5 0-6 0
bundle	2 0-2 6	—Pink & White...	5 6-6 0
Lettuce, Cos, doz.	1 0-3 0	—White	5 0-5 6
—Cabbage Let-		—Blue	5 0-5 6
tuce, per	1 6-2 6	—Guernsey	— 6 0
Mushrooms, cups	2 6-3 6	Turnips, new, per	
—broilers	2 0-2 6	doz. bun.	12 0-12 0

REMARKS.—Quantities in almost every section are on the heavy side, but many sections report a weakening in demand, resulting in declining values. English Tomatoes are arriving in large quantities and prices of Tomatoes from all sources are lower. Cucumbers are plentiful and cheaper and an improvement is looked for in both departments. Hothouse Grapes, Peaches, Nectarines and Melons are quoted slightly lower. Cherries are comparatively plentiful with prices showing a considerable variation according to the quality and variety. While dessert Gooseberries are meeting with a good reception, cooking berries are not wanted. Black Currants are in good supply, and considering the large quantities, prices are fairly good. Good quality Red Currants have sold well, and Raspberries are fairly reasonable in price. Apricots from Spain are almost finished, but Plums and Gages from the same source are abundant and cheap. Best Mushrooms are a firm trade, but broilers are more plentiful and cheaper. Now that outdoor Beans are available forced Beans will be difficult to clear. Good Peas are wanted. Marrows are quoted much lower. The prices of green vegetables remain about the same as last week. The Potato trade is steady.

GLASGOW.

BUSINESS in soft fruits was very active during the past week. Scotch Strawberries were at the height of their season and as supplies were not too plentiful prices were well maintained at from 8d. to 12 per lb. Wisbeach growers continued to send moderate quantities daily and these made 14 to 16 per 3-lb. chip. English Black Currants were very plentiful towards the end of the week and were brisk from 10d. to 12 per lb., while Red Currants sold at 6d. to 8d. Raspberries realised 8d. to 10; white Cherries, 20 to 24; black Cherries, 16 to 20 per crate; Apricots, 10 to 12; and French Green-gages 13 6. Gooseberries were dearer at 4d. to 7d. per lb. Canary Bananas were in less demand and prices favoured buyers at 17 6 to 25. The trade in Apples, Oranges and other fruits was quiet and values remained at former levels.

Several classes of vegetables, especially Carrots and Turnips, were exceedingly scarce. On the other hand, Lettuces were plentiful and cheap at 1/6 to 2/6 per dozen; Cauliflowers also declined and only made 3/- to 4/6 on Friday. Evesham Peas were worth 16/- per pot; Dutch Carrots, 4/- to 6/-; Cucumbers, 4/- to 8/-; and Mint, 3/- to 5/-. The market was again well stocked with Tomatoes, which realised from 9d. to 1/- for Scotch, 8d. to 9d. for English and 7d. to 8d. for Guernsey produce.

The cut flower market was unusually quiet until Friday, and although supplies continued short, prices did not respond, indeed in the case of Carnations values declined to 1/- per dozen for all colours, while the top rate at the end of the week never exceeded 2/- for good blooms. Irises were worth from 3d. to 8d. for 6's; Sweet Peas, 1d. to 6d. per bunch for ordinary, and 8d. to 10d. for specials; Gypsophila, 5d. to 8d.; Pinks, 1/6 to 2/-; Marguerites, 2 to 4/-; Morning Star, 2d. to 4d. per bunch; Gladioli The Bride, 5d. to 6d.; Peach Blossom, 9d.; and Smilax, 1/- to 1/6. Roses kept steady, Ophelia ranging from 2/6 to 4/- per dozen; Mme. Abel Chatenay and Mme. Butterfly, 2/- to 3/6, and Richmond, 1/6 to 2/6.

TRADE NOTE.

THE members of the staff of Messrs. Alex Dickson and Sons' Belfast establishment held their annual picnic under ideal conditions. The party paid a visit to Shane's Castle, Co. Antrim, where, by kind permission of Lady O'Neill, they were admitted freely to the gardens and grounds. Mr. D. Frizell, the gardener, met the party and showed them the beauties of the place, including the ruins of the old castle, which occupies a picturesque position overlooking Lough Neagh. Miss Walker, the firm's clever head florist, made arrangements for tea, which was partaken of close to Lady O'Neill's fine rock garden. After tea the party explored the banks of Lough Neagh, and after further refreshments returned by char-a-banc via Antrim, Dunadry and Templepatrick to Belfast, thus completing a most enjoyable outing, thanks to the excellent arrangements made by Mr. G. Falconer.

THE WEATHER FOR JUNE.

This was the driest and brightest June since the records commenced, 54 and 33 years ago respectively, and it yielded two fewer "rain days" than any other month whatever during the 54 years. So far as total rainfall was concerned, it was practically a tie with February, 1891, and in regard to total sunshine, a tie with May, 1897, but those months differ in length from June, and expressing the values in daily means, June, 1925, becomes decidedly the driest and sunniest month of any name in the local records. It had also the largest amount of evaporation. Southerly winds were almost absent, while north-westerly ones have in only one previous June been so prevalent, their duration being almost exactly double the normal. They were, however, in reality northerly winds, locally twisted into north-westerly or "sea-breezes" by the very fine weather. Except at its commencement, and during the third week, the month was an unusually calm one, the afternoon hours being the only breezy ones. Humidity was abnormally low. Very fortunately, the heavy rainfall of the previous month rendered the subsoil water level normal. The mean temperature was only 1½ above the average, and the maximum thermometer never reached 8°. Sunshine occurred every day, the total amounting to 295 hours, or 84 hours above normal. Rain fell to a measurable amount on one day only; the quantity was 0.06 inch, or 2.22 inches below the average. There were minute showers on three other days. All miscellaneous phenomena were entirely absent. Joseph Bazendell, The Fernley Observatory, Southport.

GARDENING APPOINTMENTS.

Mr. E. Avery, for over twenty years gardener to the late J. B. Brooks, Esq., J.P.; nine months with Messrs. J. and A. BRAZIER, LTD., at Finstall Park, Bromsgrove; one year previously foreman at Lockerley Hall, near Romsey, and two years in the gardens of H.M. the late EX-EMPERESS EUGENIE, at Farnborough Hill House, Hampshire, as gardener to G. L. WALLER, Esq., Finstall Park, Bromsgrove, Worcestershire. (Thanks for 2s. for R.G.O.F. Box.—EDS.)

Mr. Charles Frost, recently gardener to SIR ROBERT KINDERSLEY, at Plow Hatch Hall, Sharpthorne, Sussex, as gardener to A. R. MOTION, Esq., at Upton House, Banbury.

Mr. A. Ranger, previously at Sylvan Mount, Woldingham, and West Horsley Place, Surrey, as gardener to T. G. CANNON, Esq., Broadfields, Crawley, Sussex.

Mr. F. Wakefield, for two-and-a-half years gardener at Le Court, Liss, as gardener to Mrs. ST. JOHN LAMBERT, Dunfold, Warnham, Sussex.

SITUATIONS VACANT

Twenty words (or three lines including headline), 4s., and 1s. for every succeeding eight words (or line or portion thereof). Fee for having replies addressed to this office, 1s.

Advertisers desiring their Advertisements repeated must give full particulars, otherwise no notice can be taken of their communications. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. To part with original documents means to run a great risk of their being mislaid.

When addressing Box numbers, it is essential to give the initials or pseudonym, as well as the correct number of the box.

MUNICIPAL AND PUBLIC.

COUNTY BOROUGH OF PORTSMOUTH.

APPOINTMENT OF WORKING GREENKEEPER AT THE GREAT SALTERNS GOLF LINKS.

THE Council invite applications from qualified and experienced persons for the above position, at a wage of £3 15s. per week, rising by annual increments of £5 to the maximum of £4 10s per week, which will be subject to the statutory deduction of 5% under the Local Government and Other Officers' Superannuation Act, 1922, as and when this appointment is established.

The successful candidate will be required to pass a medical examination.

Applicants must not be more than 35 years of age, and it is essential that they have had previous experience.

Forms of application may be obtained from the undersigned.

Applications, accompanied by copies of not more than three recent testimonials, enclosed in an envelope endorsed "Greenkeeper," must be delivered at my office not later than 10 a.m. on Friday the 14th day of August, 1925.

Canvassing either directly or indirectly will be a disqualification.

F. J. SPARKS,
Town Clerk.

The Town Hall,
Portsmouth,
11th July, 1925.

PRIVATE.

SINGLE MAN, capable of taking complete charge; grounds 3 acres; mowing done by chauffeur; vinery and plant houses; help given; good lodgings; state wages.—REV. D. F. WRIGHT, F.R.H.S., Plumtree Rectory, Nottingham.

SINGLE-HANDED GARDENER required.—For particulars, LADHAM, Bushton Manor, Clyffe Pypard, Wilts.

SINGLE-HANDED GARDENER, age 35 to 45, thoroughly experienced, with special knowledge in Vines and Carnations; good reference essential; house provided.—MRS. RAIKES, 107, Mitchley Lane, Harborne, Birmingham.

GARDENER, SINGLE-HANDED. Wife as Cook-General; also vacancy for a daughter; live in quite separate apartments, furnished or unfurnished; country village.—Apply G. C. A., Box 11, 5, Tavistock Street, Covent Garden, W.C.2.

GARDENER, experienced, fruit, flowers, lawns, another kept; small furnished cottage found; preference given if wife assist in house part time.—State wages and references to S. F. R., Box 35, 6, Tavistock Street, Covent Garden, W.C.2.

GARDENER required, thoroughly experienced, used to Inside and Outside work; no cottage available; live out.—Write, stating age, experience, and wages required to M. D., Box 28, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, SECOND, chiefly for glass; single; good wages, with bothy and attendance.—Particulars to BARTON, Sidbury Gardens, Sidmouth, Devon.

WANTED, SECOND GARDENER, chiefly for Inside work. Wages 40/- with cottage.—Apply to S. WARNER, Hole Park, Rolvenden, Kent.

GARDENER WANTED, good cottage, apply with references to BOXHOLME, Ruxted, Sussex.

WANTED, UNDER GARDENER, single, about 24 or 25 years, experienced, work chiefly in greenhouses, take turn duty; no bothy; gardener's reference.—State age, experience, wages, etc., to R. C. COODE, Esq., Polapit Tamar, Launceston, Cornwall.

UNDER-GARDENER and WIFE wanted, used to private service, no family; Wife as House-Parlourmaid, 8 to 12 and 7 to 9.30; good cottage and garden. Man 30-; must have good references.—HUNTINGDONSHIRE, Box 39, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, young MAN with good Inside experience, take charge fruits, plants; bothy.—WM. BROOKES, Nuthall Temple Gardens, Nottingham.

WANTED, GARDENER, experienced man for conservatory, flower, fruit, and vegetable garden; single man preferred.—Apply, J. TATES, Braemar, Manor Road, Teddington.

WANTED, experienced MAN for conservatory and flower garden; wages 42/- per week.—W. ROWE, Squerries Gardens, Westerham, Kent.

WANTED, FOREMAN, married, experienced Inside and Out and house decorations, wages 42/- and cottage.—Particulars to E. BRISTOW, Castle Hill Gardens, Near Barnstaple.

WANTED, FOREMAN, thoroughly well up in fruits, plants, good with Carnations and the general run of glass work; wages 45/- a week, bothy, duty 5/-.—Full particulars to and from W. M. GEDDES, Brockwood Park, Alresford, Hants.

WANTED, FOREMAN for Pleasure Grounds, thoroughly experienced in Roses and herbaceous borders.—Apply, stating wages, with bothy, etc.—G. PERRYMAN, Didlington Hall Gardens, Brandon, Suffolk.

WANTED, FOREMAN, for Pleasure Grounds, flowering shrubs, and herbaceous borders of considerable extent; must be capable of taking responsible control of outdoor staff and work. Good wages, with house, those only with first-class experience need apply, giving full particulars of experience to C. MOTT, Wittington Gardens, Marlow, Bucks.

WANTED, MAN for Pleasure Grounds, take duty; also MAN to work in gardens and attend hot-water apparatus, able to milk; bothy accommodation in both cases. Please give full particulars, stating wages required.—HILL, Sharston Hall Gardens, Northenden, Cheshire.

WANTED, experienced KITCHEN GARDENER; also MAN for Pleasure Grounds, one used to motor mower.—State age, experience, wages required with bothy, to SMEETH, Elmer's Court Gardens, Lymington, Hants.

WANTED, young MAN, Kitchen Garden and Pleasure Grounds. State wages, with bothy; copies of refs.—TOMPKINS, Round Hill Gardens, Benfleet.

WANTED, for private house, good married man as GARDENER; plants and vines.—W. BELLAMY, Park House, Wimlington, near March.

WANTED, LEADING HAND for Kitchen Garden, fruit, etc.; bothy shortly. State age and experience.—A. MORPHETT, Chipstead Place Gardens, Sevenoaks.

WANTED, two outside JOURNEYMEN, one for Kitchen Garden and one for Pleasure Grounds. State wages with bothy.—Copies of refs., with age and experience to A. C. GRIEVE, Butwalls Gardens, Leigh Woods, Clifton, Bristol.

WANTED, JOURNEYMAN, Inside, fruit; 35/- per week, duty 10 6.—F. JOHNSON, Maiden Erlegh, Reading.

JOURNEYMAN wanted at once, chiefly Kitchen Garden. State wages and references.—M. FLOWER, The Gardens, Barnier Hall, near Kings Lynn.

IMPROVER, age about 18, used to glass. Inside and Out, for gentleman's garden near Manchester. State experience, wages, and references; no bothy.—Box 31, WHEELER'S ADVERTISING AGENCY, Manchester.

WANTED, IMPROVER, about 19, for Inside and Out. State wage required, with bothy, duty paid.—EDGE, Orton Hall Gardens, Peterborough.

WANTED, IMPROVER, 19, Inside; experienced watering, ventilating, duty; commence, 22/- weekly; bothy, etc.—Copies testimonials, CLIPSTONE, Melchet Gardens, Romsey, Hampshire.

SINGLE MAN required, good knowledge of potting, watering, generally useful Inside and out; lodgings on place; wages 38/-, duty paid.—Particulars and reference to HEAD GARDENER, Sinah Warren, Hayling Island.

YOUNG MAN, not under 18, some experience, to work Inside under Foreman. Willing to look after bothy mess-room.—Full particulars to MARSHALL, The Gardens, Maple Hayes, Lichfield, Staffs.

WANTED, a respectable MAN, and wife as COOK-GENERAL, and man for small gardens; good references required.—Apply, HAMMOND, Durham, Sidcup, Kent.

TRADE.

ORCHID GROWER, wonderful opportunity, large salary, for successful, capable, experienced man, capable of supervising Cattleya species for cut flower market in large, well established business at Brampton, Canada, interview (by appointment), Duggan, at Waldronhyrst Hotel, South Croydon, up to 6 p.m. July 24th, after that write DUGGAN, Brampton, Canada.

WANTED, FOREMAN GROWER, Inside and Out, small nursery, take charge house, Buckingham.—Refs. to 8, Milton Road, Oundle.

WORKING FOREMAN required with a thorough knowledge of Chrysanthemums, Cars, Toms, etc.; must be very capable, energetic, trustworthy and able to manage labour to advantage; married man essential; house near work; country district, station 1 mile, Warwick 4 miles. Applicants send references, with full particulars and experience, stating age, wage expected, and when free. Only capable men need apply.—LOWE & SON, Hatton, Warwick.

WANTED, UNDER FOREMAN, for Rose and fruit tree nursery; must thoroughly understand budding and grafting, also execution and packing of orders. State age, experience and wages required.—HOPWOOD & SON, Cheltenham.

WANTED, GROWER, Ferns and general pot stuff, Dublin Market Nursery, good wages and prospect to experienced energetic man, full particulars, wages, &c., to B. B. D., Box 31, 5, Tavistock Street, Covent Garden, W.C.2.

EXPERIENCED JOBBING MAN needed for Highgate, permanency if suitable.—W. X., Box 30, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED. — REPRESENTATIVE, with good knowledge of the nursery and seed business; must be a young and successful salesman, of good appearance, and capable of advising clients; excellent prospect for an active, energetic man with the necessary push and qualifications; motor cycle found.—Reply, with full particulars as to age, experience, and salary expected, to KING'S ACRE NURSERIES, LTD., Hereford.

WANTED, FLORIST, male or female, to take charge of a branch shop, must be well up in window dressing and wreath making, &c.—FLORIST, Box 26, 5, Tavistock Street, Covent Garden, W.C.2.

FLORIST. — ASSISTANT wanted, must be a first-class maker-up of Floral Designs, Bouquets, etc., and a good saleswoman.—ALEX. DICKSON & SONS, LTD., Royal Florists, Belfast.

THE Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.2°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, July 22, 10 a.m. Bar. 30.1 temp. 75°. Weather Sunny.

America's Greatest Garden: The Arnold Arboretum.

OLD fashioned people who cling to antique shibboleths, who hold with Shakespeare that "good wine needs no 'bush'" may perhaps entertain a passing feeling of regret that the Arnold Arboretum—certainly America's greatest garden and in some respects the greatest in the world—should have to submit publicly to such emphatic and almost lyrical encomium as that administered to it in the volume* recently published by Mr. E. H. Wilson. The feeling passes, however, as the reader becomes more and more absorbed in Mr. Wilson's book, and even the most rapturous passages fail to detract from the intrinsic interest. For the author not only knows and loves the Arnold Arboretum—as well he should—but he possesses the art of conjuring up the scenes presented by that wonderful place, and of awakening bright memories of the glories seen there, it may be many years ago. So as we read we condone the exuberance of language because of

our sympathy with the enthusiasm which evokes it. Later on, when the last pages have been read, this somewhat supercilious attitude of ours is lost in admiration of the art which enables Mr. Wilson to tell so much of the story of the garden and of its accomplishments in so brief a space. Mr. Wilson shows us the garden in spring when the garden year is ushered in by the pushing forth of *Prinsepia sinensis*, the only plant of its Rosaceous genus which is hardy in this Arboretum. With it appear the rose-pink blossoms of *Rhododendron dauricum* var. *mucronulatum*, one of the relatively few *Rhododendrons* which do well in that hard winter climate. From that moment, throughout the year, the Arboretum offers unflinching and often unique attractions to the lover of hardy plants. And what resource and indomitable energy have gone to achieve this result! For more than fifty years Sargent—greatest of plantmen—has laboured, and in the teeth of hard circumstance has triumphed. What if the winter cold kills out the European Yew, *Taxus baccata*; the Director, who compasses the whole world to make one proselyte, finds in the Japanese species, *T. cuspidata*, a plant which will survive and give to American gardens the formal beauty denied them by the tenderer European species. What if the Cedar of Lebanon, transported to Boston via England, proves tender! There are in Asia Minor, on the Cilician Taurus, regions of harsh climate where snow lies for five months in the year. There *C. Libani* grows, and thence in 1868 seeds were imported into the garden and have yielded trees already thirty feet high that bid fair to resist the harsh winter of Massachusetts. So was it with the Douglas Fir and other fine Conifers from the Pacific slopes. English collectors, Douglas, Lobb, and others found and introduced them to this country, but when these plants were re-introduced into America and grown in the Arboretum they all proved tender. Nevertheless, with rare perspicacity, the Director refused to be beaten. Seeds of the Douglas Fir were obtained from Colorado, and from them plants were raised which proved hardy, so that yet another valuable tree was added to the collection. A like success attended later attempts to grow the Yellow Cedar, *Thuja plicata*, and the Pacific types which do so well in England and proved tender; it was not until seeds obtained from Montana were sown that the plant could be established. These examples—and they might be multiplied many fold—prove what may be and has been done by man and his indomitable mind when that man is Charles Sargent. Although Mr. Wilson who, as all the world knows, has done great service to horticulture by his explorations and plant introductions, claims to write mainly for the inexperienced person, the more the reader knows about trees and shrubs the more will he learn from these pages. For living among the plants of the Arboretum as he does, Mr. Wilson has sure knowledge of which are the best of each kind. Thus of the Cherries which are grown in such variety in the Arboretum, he chooses, as among the best, *Prunus subhirtella*, the Spring Cherry of Japan; and *P. incisa*, of dwarf habit and great floral beauty. Known since 1784, but not introduced into gardens until the 20th century, the latter species is of particular interest in that it is the only one amenable for cultivation in small pots to form dwarf

trees. Those who have seen the amazing collection of Crab Apples which has been made by Sargent will be specially glad to have Mr. Wilson's guidance through the bewildering maze of beauty which these plants present. The flowering season of the Crabs is ushered in by the Manchurian Crab Apple, *Malus baccata* var. *mandshurica*, the pure white flowers of which are an inch or more across. Then the Eastern *M. spectabilis* blossoms and, later, *M. floribunda*. Less generally grown is *M. Halliana*, a form of Chinese origin; while not so rarely grown, but well worth a place in every garden, is *M. Sargentii* with white flowers and wine-red fruits. A newer species from the China-Thibet borderland is *M. toringoides*, perhaps the most beautiful of the smaller-growing Crabs. Then there is the Chinese *M. thiefera* with wands of blossom fifteen feet long, and leaves from which the natives make a beverage which they call "red tea." The last to bloom is the native Virginian Crab, *M. angustifolia*, which, though its home is in the south, has proved hardy in the Arboretum. With equal knowledge and keenness of observation Mr. Wilson speaks of all the things which grow and thrive in the garden "from the Cedar of Lebanon to the Hyssop which springeth from the wall." His book is one that all lovers of trees and shrubs will cherish, and which, if they have not yet made pilgrimage there, will turn their steps towards this Mecca of the hardy plant world—the Arnold Arboretum.

Memorial Gates at Wisley.—The new gates to the main entrance of the Royal Horticultural Society's Garden at Wisley are to the memory of the late Rev. W. Wilks, M.A., V.M.H., the Society's Secretary from 1888 to 1920. The handsome gates (Fig. 30, p. 71) are in ornamental wrought-iron and bronze, supported by brick piers surmounted by Portland stone caps and with side panels. On the gates are pediment scrolls, leaves and flowers cast in bronze, and the letters W. W. are shown in gilt in the centre of each gate, surrounded by Shirley Poppies. The side panels bear the Royal Horticultural Society's "coat-of-arms" in solid bronze. There is also a bronze tablet at the left-hand side of the gates, which bears this inscription:—"This gateway is erected to the memory of the Rev. William Wilks, M.A., V.M.H., Secretary Royal Horticultural Society from 1888 to 1920."

Chair of Forestry in Aberdeen University.—At the summer graduation ceremony at Aberdeen University, Sir George Adam Smith, Vice-Chancellor, who conferred the degrees in the absence of the Chancellor, the Duke of Richmond and Gordon, announced the gratifying news that already £17,000 of the £20,000 required for a Chair of Forestry had been assured. The greatest satisfaction is felt in arboricultural circles over the splendid reponso made on behalf of this much required and long over-due Chair in the heart of a countryside exquisitely adapted and provided for the teaching of forestry.

Flowering Plants of South Africa.—The April issue of *The Flowering Plants of South Africa* (Part 18, Vol. 5) contains descriptions, and illustrations in colour, of ten interesting species. The first is *Aloe Marlothii*, t. 171, A close ally of *A. ferox*, which grows about fifteen inches high and carries a branched inflorescence, each branch being a raceme of yellow and orange flowers with the stamens extending considerably beyond the corolla tube. This appears to be a very ornamental plant. *Aloe rupestris*, is also figured, t. 178; this is a native of Namaqualand and has a thick stem about two metres high, crowned

* *America's Greatest Garden: The Arnold Arboretum.* By E. H. Wilson, M.A., V.M.H. Published by The Stratford Co., Boston, Mass.

with a rosette of stout, upward-pointing, sharply-pointed leaves, from the centre of which arises the branched spike, each separate inflorescence being of bottle-brush shape, carrying yellow flowers with brilliant red stamens. A third species, *Aloe sessiliflora*, t. 180, has a stem rising to to ninety centimetres high, with a dense rosette of fleshy, channelled and margin-toothed leaves at the apex. The long peduncle is somewhat compressed laterally, clothed with oblong, brown bracts, and terminates in a densely-flowered, cylindric spike, somewhat suggestive of a small spike of *Eremurus Bunzei*. The flowers are yellowish and expand more widely than in many species, and the inner segments have a reddish median line. *Hypoxis Rooperi*, t. 172, is an Amaryllid common in the south-eastern portion of the Cape Province, but extending through East Griqualand into Natal and northwards to the Drakensbergen, round Barberton. The species is acaulescent, with a large underground corm, and the flower stalks rise from the axils of the distichous, softly pilose leaves. The flowers are widely expanded and yellow in colour. *Crassula columnaris*, t. 173, from the Cape Province, is a quaint little species found in many parts of the Karoo. The broad, fleshy leaves are closely attached to the short, stout stem, and the latter bears a terminal, globose inflorescence consisting of numerous small, whitish, tubular flowers. This species should prove a great attraction to cultivators of Succulent plants. It is of very compact growth, and in its native home is usually exposed to the full force of the sun's rays. *Senecio tamoides*, t. 174, belongs to the Scandentes section of the genus and is a common plant on the coastal belt of Cape Province and Natal. The leaves are bright green, broadly ovate, acuminate, and somewhat hastate at the base, while the inflorescence, which is a many-sided corymb, consists of numerous heads in which there are five prominent ray florets of yellow colouring. *Gladiolus tristis*, t. 175, is an old and well-known species with whitish flowers delicately marked with pink. It is readily raised from seeds, and under proper cultivation will flower about fifteen months after sowing. *Sarcophyte sanguinea*, t. 176, is a parasite on the roots of trees and shrubs and appears to be confined to the eastern portion of Cape Province, where it is generally found on the roots of *Acacia Karoo*. The plant really consists of a large, dense, pyramidal inflorescence of small, crimson flowers, rising directly from the ground. Unfortunately, although very effective, the flowers have a most objectionable odour, so much so that the presence of the plant may be detected before it can be seen. *Protea pityphylla*, t. 177, appears to be a very graceful species, its slender stems being furnished with long, needle-shaped leaves, and surmounted by a head of flowers, of which the purplish, involucre bracts form the chief attraction. *Senecio fulgens*, t. 179, known also as *Kleinia fulgens*, is a somewhat straggling, Succulent plant bearing small heads of brilliant, coral-red flowers. It grows freely and flowers profusely, and is suggested as being well worthy of cultivation.

Glasgow Flower Show Abandoned.—As the result of the negotiations between the Finance Committee of the Glasgow Corporation and the Directors of the Glasgow and West of Scotland Horticultural Society, it has been decided to give up the idea of holding the annual three-day show which had been fixed to take place in Kelvin Hall, which has been destroyed by fire. No other suitable accommodation is available in the city, and the Society's suggestion to hold the show in marquees at Queen's Park did not find favour with the civic authorities.

Dr. J. Burtt Davy.—We learn that Dr. J. Burtt Davy has been appointed Lecturer in Tropical Botany at the Imperial Forestry Institute, University of Oxford.

Clay Cup Award for a Fragrant Rose.—Mr. W. R. Dykes, writes:—I am desired by the President and Council of the Royal Horticultural Society to bring to your notice the fact that the Clay Cup for a new Rose of good form and colour, not in commerce, possessing the true old Rose scent, was awarded on July 14 to the variety named *Lady Ellen Magloona*, which was raised and shown by Messrs. Alexander Dickson and Sons, Hawtmark, Belfast.

Mr. Robert Bolton.—Four years ago we published an appreciation of Mr. Robert Bolton, head of the firm of Messrs. Robert Bolton and Son, Birdbrook, Halstead, Essex, who has been so eminently successful as a cultivator, raiser and exhibitor of Sweet Peas. We now publish his portrait as he has achieved a unique success by winning the Eastbourne Challenge Cup and the Bath Challenge Cup at the exhibition of the National Sweet Pea Society held in the Royal Horticultural Hall, Westminster, on July 16 and 17. Both these challenge cups



MR. ROBERT BOLTON.

are open for competition among traders and there is always a keen contest for their possession.

Spoilation of the Swiss Flora.—Col. W. J. Dundee, in a letter to *The Times*, points out that although British tourists are frequently accused of disturbing the quiet and lovely Swiss valleys and uprooting alpine plants wholesale in order to send them to Britain, they do not deserve this accusation. He contends that it is not the British tourists who are ruining the glory of the Alpen Rose—the dwarf *Rhododendron* of these mountains—for whereas the British tourist will pluck a sprig or two, the Swiss tourist takes bunches, often as much as he can carry. Twenty years ago, in June and July, the slopes between Alpigen and Kleine Scheidegg were crimson with blossom. Now the colour is in patches. In twenty years more this *Rhododendron* may have withdrawn from the public view as the *Edelweiss* has, unless the Swiss Government interferes, and protects before it is too late one of the beauties of their country.

Fruit Crop Reports.—We have already had returned to us a large number of the forms upon which we invited gardeners and others interested in fruit cultivation to report upon the various crops of hardy fruits. Several, however, have not yet been returned and we shall be glad if our correspondents will send them in so soon as possible. If there

are other correspondents who would like to contribute reports, we shall be glad to supply forms if they make immediate application for them.

Bees Swarm on a Sugar Ship.—An extraordinary incident is reported from Greenock, where a steamer was discharging a cargo of sugar in the Albert Harbour. In the afternoon a swarm of bees, which are believed to have crossed the Firth of Clyde from Helensburgh, alighted in the hold. Disturbed by the unloading operations, the bees left the hold and alighted on the scales on the quay-side on which the bags of sugar were being weighed, and caused a stoppage of work until the services of a local bee-keeper were secured and the bees safely housed in a skep.

Certificated Plants.—Several very interesting plants, not all of them new, were exhibited before the Floral Committee of the Royal Horticultural Society on July 14; no fewer than six of them received an Award of Merit and three of these are illustrated in the present issue. *Hemerocallis Radiant* (see Fig. 26, p. 63) is one of Mr. George Yeld's latest developments in this genus. The flowers are orange-yellow and so much as five inches wide at the mouth. It appears to be a strong growing and free-flowering variety. *Hoya bella* (see Fig. 27, p. 65) is a beautiful old garden plant and was represented by an exceptionally good specimen shown by Messrs. L. R. Russell, Ltd., Richmond. *Salvia dichroa* (see Fig. 28, p. 67) is another old species which grows about two-and-a-half feet tall and produces long spikes of flowers which are white in the bud stage and rich mauve when fully open. This useful garden plant was exhibited from the Cambridge Botanic Garden.

More Downland for Brighton.—The Corporation of Brighton has purchased over three hundred acres of Downland, including Hollingbury Park and the ancient, British, Hollingbury Camp. This wide and wild area was opened to the public a few days ago and is a fine addition to the large acreage of Downland already acquired by the Corporation on the outskirts of the town.

Summer Time.—The Summer Time Bill passed through the House of Commons on Friday, July 17, after many efforts had been made to kill it or reduce its usefulness. Under the provisions of the Bill "Summer Time" will extend for six months, commencing on the first Saturday in April and ending on the first Saturday in October.

British Association.—The British Association for the Advancement of Science will meet this year at Southampton, from Wednesday, August 6 to Wednesday, September 2. The Botany section, with its Forestry sub-section, will hold meetings in University College, Highfield. Social functions in connection with this meeting of the British Association will include garden parties offered by Lord and Lady Swaythling, at Townhill Park; by Lord and Lady St. Cyres at Wallhampton Park, near Lymington; by Mr. W. Collins at Westend; and visits to the New Forest, Stonehenge and Southampton Docks.

Presentations at Chester.—On the occasion of the Royal Agricultural Society's show at Chester, Mr. G. P. Miln, Director of Messrs. Garton's, was presented to the King by Sir Gilbert Greenhall. His Majesty expressed sincere sympathy with Mr. Miln in the suffering he had endured owing to a recent accident and wished him a speedy return to good health. Mr. Watt, head of the firm of Messrs. Little and Ballantyne, of Carlisle, was also presented to His Majesty, who complimented Mr. Watt upon the remarkable vigour he showed at the advanced age of 84 years.

Raspberry cultivation in Scotland.—At a conference attended by members of the Perthshire and Forfarshire Fruit Growers' Association and representatives of the East of Scotland Agricultural College, Edinburgh, the senior lecturer stated that the College was prepared to assist in research work in Raspberry cultivation provided that land could be made available for the purpose, and that cultivation could be carried out in conformity with the instructions. The proposal was favourably received and the Association undertook to advise the College if it was found possible to secure the necessary land. It was reported that representations had been made to the railway companies with the object of obtaining tickets for fruit pickers at the rate of a single fare for the double journey, but the reply held out but little hope of a reduction at present. It was agreed to fix the wages of fruit pickers for the coming season at three farthings per lb. for the first three pickings.

German Plum Crop.—A report received from the Department of Overseas Trade states that the prospects for the Zwetschen Plum crop are unfavourable owing to drought, cold weather and pests. Early in the season there was good promise as the trees blossomed well but severe damage was caused by subsequent bad weather and attacks by caterpillars.

Hampstead Heath.—A small piece of land known as The Paddock, belonging to Viscount Leverhulme, will probably become part of Hampstead Heath very shortly, as the amount required, £6,500, has nearly all been subscribed, and the Hampstead Council is being asked to make up the sum, about £700, which still has to be raised. The Paddock forms part of Lord Leverhulme's beautiful grounds at The Hill, in the midst of the Heath, which we understand is to be placed on the market. The gardens are divided into two parts by an ancient right-of-way, and negotiations were undertaken with the late Lord Leverhulme to exchange The Paddock for the narrow strip of ground forming the footpath; no agreement, however, was reached.

Ken Wood Opened to the Public.—On the 18th of July, the latest addition to the open spaces of London, Ken Wood Park, was opened by the King. For many years past efforts have been made by public spirited people to secure as an open space the lovely estate of nearly 250 acres which was the property of the Earls of Mansfield, and which included one of the very few remaining remnants of the old Middlesex forest, a tiny piece of delightful woodland in which birds make their homes, and even the badger has been seen there. Unfortunately, it has not been found possible to purchase the whole of the estate, but 121 acres have been secured, which will extend the open space at Hampstead to a total of 744 acres. The King alluded in his speech to the deplorable habits of the people using open spaces, who selfishly spoil these beauty spots by leaving paper and litter on the ground. It is difficult to over-estimate the unsocial nature of such behaviour; but so far as Hampstead Heath is concerned the London County Council is largely to blame in not providing enough paper receptacles, and in not calling sufficient attention to the position of those which are provided. At Kew Gardens, although the large baskets provided may themselves not be exactly objects of beauty, they do serve their purpose, with the result that the litter at Kew has been reduced to a minimum. It is to be hoped that the London County Council will follow the same plan at Ken Wood, so that its beauty, at present almost completely unspoiled, may be retained, to the lasting benefit of all who visit it.

The Kippen Vine. The Vine of the Gros Colmar variety, which was planted thirty-six years ago by Mr. Buchanan at the Kippen Vinery, and grown on the extension system,

until it now occupies four glasshouses, has produced a record crop of 2,163 bunches during the past season. The total would have been larger, but one of the branches, thirty feet long, failed when the fruit was in an advanced stage of growth.

Antwerp Horticultural Society.—The monthly meetings of the Antwerp Horticultural Society continue to be successful and popular. The Burgomaster, M. Van Cauwelaert, and another member of the City Council visited the exhibition of July 12, and expressed great appreciation of the exhibits. There were a

show; Dorset Horticultural Society's show; Crowthorne, Finchampstead, and St. Sebastian Horticultural Society's show. Thursday, July 30: Royal Lancaster Agricultural Society's show (3 days). Saturday, August 1: Blackburn and District Horticultural Society's meeting and lecture; Lockerbie Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Preservation of Kidney Beans.*—The following is the process employed by M. Gehen de Montigny for the preservation of green Kidney Beans:—In fine weather

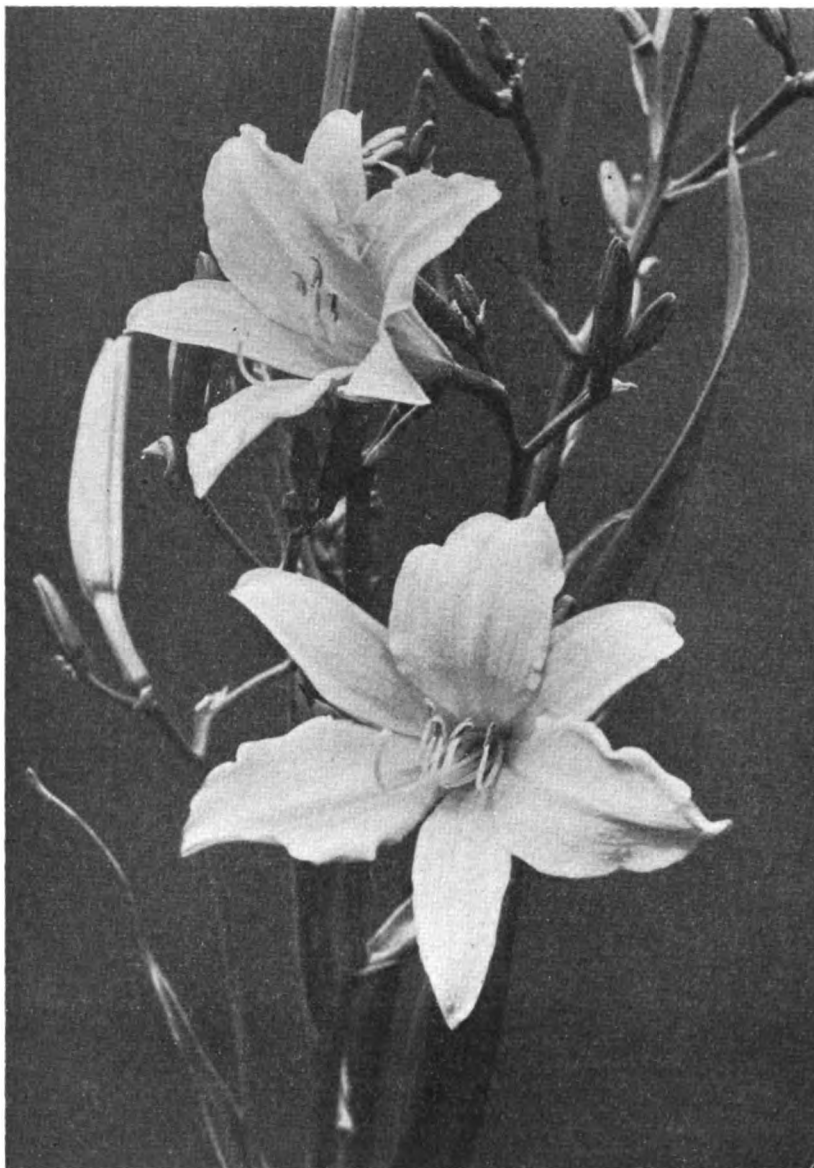


FIG. 26.—HEMEROCALLIS RADIANT.

R.H.S. Award of Merit, July 4 (see pp. 58 and 62).

number of visitors during the day, and in the evening they were presented with all the flowers which had not previously been sold, an act of courtesy which is likely to enhance the popularity of the exhibitions.

Appointments for the Ensuing Week.—Tuesday, July 28: Royal Horticultural Society's Committee meet; Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, July 29: Haywards Heath Horticultural Society's show (2 days); Mitcham, Tooting and District Horticultural Society's meeting; Sevenoaks Horticultural Society's

gather the pods before the seeds are too visible, take the threads off, plunge the pods in boiling water, and take them out again immediately; let them cool, put them in a tub in layers five-inches deep, alternating with Vine leaves, which must begin and end the series; on the top of the last layer of Vine leaves put a stone, heavy enough to keep the whole well pressed. Then pour in some salt water until the top is covered; replace the water as it evaporates. The Beans can thus be preserved quite fresh. *Gard. Chron.*, July 27, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Sobralia.—So soon as the flowering season is past the Sobralias should be examined, and any that are found to have become pot-bound, or showing signs of being less vigorous by having produced shorter stems than last season, should be re-potted. As Sobralias are strong growing plants and produce a large number of fleshy roots, they must therefore be afforded pots or pans of a reasonable size to accommodate them. In re-potting small and moderate sized specimens, it is not advisable to disturb the whole of the ball of roots. If this is done it causes a check to the young growths. Large examples that are of such dimensions that it is decided not to afford larger receptacles, may be broken up, and each portion potted singly, or the pieces made up into compact specimens of convenient size.

Potting.—When re-potting, the pot or pan should be filled to one-fourth its depth with drainage material. A compost consisting of equal parts good fibrous loam with all the fine particles shaken out, and Osmunda fibre cut up rather short, with a light sprinkling of crushed crocks, is a suitable rooting medium. Press the soil firmly among the roots and leave an inch or so of space at the top for holding water. Plants that do not need to be re-potted may have a few of their old stems cut out where these have become crowded, which will throw more vigour into the young shoots. Well-rooted specimens may be watered with weak liquid cow manure once or twice each week while they are growing freely. Divided plants will require careful watering for a few weeks and should be afforded an extra shading from the sunlight. The surroundings should be kept moist and the leaves syringed once or twice daily, taking care to wet the undersides. The leaves should be sponged occasionally with a suitable insecticide.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Delphinium.—Although these beautiful plants may be raised from seeds quite easily, it is often desirable to increase the stock of named varieties for particular purposes. Division of the rootstock during the dormant season is frequently unsatisfactory and the easiest and surest method is to propagate at the present time from the base of the flower-spikes, which are now over. Loosen the soil around the rootstock and detach carefully a stem from the outside of the plant, when several healthy, dormant buds and a cluster of young roots will be found on the stem immediately above the point at which it has been severed. If these are potted into suitable sized pots and grown on in a cold frame they will make much stronger plants for next year's flowering than will result from the division of the same rootstock in the autumn or spring. The plants, however, should not be allowed to become pot-bound and should be planted in early autumn in their flowering positions.

Propagation.—The season of propagation is at its height and those who have not finished taking cuttings of such alpine and rock-garden plants as Aubrietias, Androsaces, Dianthus, Saxifragas, Veronicas, Violas, etc., should not longer delay. There are

large numbers of plants which strike freely from cuttings of partially ripened wood inserted at the present time, including Cistuses, Helianthemums, Lithospermums, Artemisias, Santolinas, Daphnes, Dutzias, Weigelas, Philadelphuses, Spiraeas, Forsythias and Genistas. They should be placed in a cold frame and kept close for a few weeks, removing the lights for an hour in the early mornings to facilitate the escape of accumulated moisture. So soon as the callus is formed they should be gradually inured to full exposure which hastens the development of roots by creating a need in the cutting to absorb moisture to replace that lost by transpiration.

Humea elegans.—This highly ornamental biennial is often grown for the "scent-garden" and to provide dot plants for large beds, for which its graceful habit makes it an ideal subject. To provide plants for next summer seeds should be sown at the present time and germinated in a warm, moist house, removing the seedlings to cooler quarters so soon as germination has taken place.

Hydrangeas.—To maintain a stock of young plants for furnishing tubs and vases a few cuttings should be struck every year and the present is a good time to insert them. Choose healthy, partially ripened, flowerless shoots and insert them firmly in sandy soil, either singly in thumbs or three around the edge of a large 60-sized pot. They strike more freely if placed in slight bottom-heat, but so soon as struck they should be hardened and grown on under cool conditions.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Fancy Pelargoniums.—Although these plants are not grown so extensively as in former years, it cannot be denied that they are very beautiful, and that they are suitable subjects for the cool greenhouse and the conservatory, requiring the minimum of fire heat, even in mid-winter. Plants which have passed out of flower and which are required for growing on another year should now be cut hard back. This pruning needs to be done with discrimination, choosing the strong and matured growths as a foundation for next year's plants, cutting these back to a point calculated to result in the production of a well-balanced specimen, and removing the weak and immature growths entirely. The plants cut back may be placed in a cold frame, allowed an abundance of air, very little water at their roots, and be syringed two or three times a day; or, they may be placed outside fully exposed to the sun. In that case, the pots should be laid on their sides during wet and stormy weather, occasionally turning them to obviate a one-sided form of growth.

Propagation.—To increase the stock of these useful Fancy Pelargoniums, cuttings may be taken from the growths cut away by pruning, choosing short-jointed pieces, about three inches in length; the best for the purpose will be the fresh, firm points of growths which have not flowered. Insert them singly in small pots filled with fibrous, sifted loam, to which plenty of sand has been added. Water them thoroughly and place them in a cold frame, which should be kept rather close, syringing the cuttings overhead mornings and evenings. Afford them a slight shade during very bright weather.

Hydrangeas.—Cuttings of these plants may also be inserted now. These, too, should be selected from points of growth which have not flowered, and inserted singly in small

pots as advised for the Pelargoniums. It is advisable, though, to place these in a propagating frame in gentle warmth. This quicker method of striking them will facilitate the formation of a well-matured flower bud at the apex of the young plant's growth before winter sets in. From the time the cuttings are well-rooted, whilst growth should be encouraged unchecked, it should, however, take place under cool treatment.

Chrysanthemums.—These and other winter-flowering plants growing in pots outside will be greatly benefited during hot weather if afforded a good syringing overhead early in the mornings and by a still more generous use of the syringe or garden engine in the evenings. Much benefit will be derived also by Cyclamens, Bouvardias, and other plants which are being grown in cold frames or pits, if, during hot weather, the frame lights are removed entirely at night, thus exposing the plants to the night air and early morning dew.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Strawberries.—The old beds that are more or less exhausted should be cleared of all the old plants, weeds, and the mulching material and the whole of these burnt. A fresh plot of ground for new beds should be prepared in readiness to receive the young plants so soon as they are ready for planting. The ground should be well trenched two spits deep, or more if possible, giving the soil a fairly good liming, one-and-a-half bushel to the rod. Any other gritty material that will serve to keep the texture open, such as old mortar rubble and ash of any kind, will be beneficial on heavy land. Apply a good dressing of rotted manure and incorporate this in the bottom spit when trenching. In a few days the soil will settle down and be in a suitable condition for planting, but before this is done surface dress the beds with manure from an old hot-bed or a spent Mushroom bed; this will assist the young plants in making roots freely.

Planting.—Everything is to be gained by an early start, therefore, planting should not be delayed; select good strong plants that have been taken from healthy stock and place two plants together in each station to secure good crowns for fruiting the first year. As the work of planting is proceeded with, make the plants very firm in the soil and if the latter is dry give the plants a copious watering. The distance for planting should be two feet six inches apart each way for strong growing varieties such as Royal Sovereign, The Duke, King George and Fillbasket; for the weaker-growing varieties of Strawberries a distance of two feet apart will suffice.

Plum Trees.—As a rule these trees are the first to require attention in summer pruning, when they are grown on walls. The Gages should not be pruned too severely; if the growths are numerous thin them and train in the most suitable shoots for furnishing the trees and for fruiting; the Gages are much freer in fruiting on the young wood than on the old. All outstanding and useless growths may be shortened to about four inches from their bases. The culinary varieties of Plums may also be dealt with; these needing a little closer pruning, as many of them fruit very well on spurs. When any leading shoots are required for extension of the tree do not shorten them at present, for if left their full length they will appropriate much of the sap and prevent the pruned growths from breaking into growth again.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Early Vineries.—When the crops are finished the borders will require a thorough soaking of clear water, especially after the present hot weather. Remove any netting from the ventilators and open the houses to the fullest extent. Cut out all sub-laterals and shorten the fruiting wood to six or eight eyes. This will help the basal eyes to plump up well for next season. Syringe the foliage every evening and use every means to keep it clean.

Young Vines in Pots.—When the vines have filled the pots with roots it will be advisable to place them out-of-doors to give them every opportunity to thoroughly ripen the wood and strengthen the growths. Tie the canes to good stakes fastened to a wire to keep them in position. Watch the condition of the soil very carefully for watering and give a little manurial assistance twice a week. Syringe the foliage daily during hot weather.

Muscat Vineries.—While the berries are colouring great care is necessary in watering the borders and feeding the roots. The soil should be kept sufficiently moist to enable the roots to continue growing. Keep the laterals pinched out and the foliage over the bunches tied back to admit plenty of sunlight. The foliage of Muscat Grapes is often not so strong as one could wish and red spider is very troublesome. This pest should be destroyed by the use of flowers of sulphur. A double thickness of fish netting over the glass will give protection to the foliage in very hot weather. The hot-water pipes should be kept just warm during the night and on dull days. Leave the top ventilators open a few inches in all vineries containing Grapes that are colouring.

Late Houses.—The Grapes in late houses are stoning and will require cool and natural treatment. Owing to the hot weather the vines have developed fairly fast and the great thing to aim at is a perfect finish of the berries by the end of September and before the cold dull weather sets in. Attend strictly to the watering of all borders both inside and out and to the feeding of the roots.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE,
Polesden Lacy, Dorking.

Tomatoes.—Outdoor Tomatoes are growing rapidly, and should receive constant attention in stopping and tying the shoots. When the plants have set about four good trusses the leading shoot should be stopped, as fruits that form after this date will not swell and ripen satisfactorily out-of-doors. The plants should never be allowed to become dried out at the roots; a mulch of farmyard manure will be beneficial in helping to conserve the soil moisture, and will otherwise assist the plants. Indoors the fruits are swelling fast and will be benefited by occasional dressings of a concentrated fertiliser and light, top-dressings of rich compost. During hot, dry weather, the rooting area will require frequent thorough soakings of water.

Early Potatoes.—The tops of most early Potatoes are dying and the crop may be lifted. If tubers are required for seed purposes great care should be taken not to damage the skins, and if the weather is fine the tubers will benefit through the skins becoming hard from being left in the open for a few days. Very often the cause of seed tubers not keeping well is storing them in an unripened state and roughly handling them when the yare lifted, thereby breaking the skin and causing much damage. It is best to lift as many of the early

varieties as possible now in order that the ground may be utilised again for other crops, such as Carrots, Turnips and Spinach, whereas if left in the ground until a later period the ground will remain idle through the winter.

French Beans.—If supplies of French Beans are required in the late autumn, sowings should be made in frames or brick pits. The frames should be deep enough to allow of the lights being put on when necessary to ensure the safety of the plants from early autumn frosts. The roots should be kept well watered and the plants grown steadily on in the frames until the nights turn cold, when protection should be given them.

Herbs.—Any herbs required for flavouring in the winter should now be cut and dried. Choose a fine, sunny day, when the plants

I prefer plants raised from seeds, but this *Agrostemma* may also be increased by division.

Dahlias.—All types of Dahlias are growing freely and will require frequent attention, reducing growths to the number required to form a good flowering plant. When tying the growths of the Decorative, Cactus, Pompon, Rosette, and Paeony-flowered varieties, care must be taken not to tie them too tightly; full allowance must be made for the stem to swell. Green fly and earwigs are two pests that most frequently attack these plants; for the latter pest very effective traps may be made by cutting the haulm of Broad Beans into seven-inch or eight-inch lengths and pushing these between the Dahlia plants and its support. The earwigs will crawl into these for shelter, and may be destroyed each morning. The belding varieties



FIG. 27.—HOYA BELLA.

R.H.S. Award of Merit, July 14 (see pp. 58 and 62).

are dry, for cutting, and hang the bunches in an airy greenhouse until they are thoroughly dry and fit for storing. To keep the herbs free from dust and dirt it may be desirable to loosely cover each bunch with a sheet of thin tissue paper.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE,
Lowther Castle, Penrith, Westmoreland.

Agrostemma coronaria.—Those who wish to grow good specimens of this handsome plant for next year's flowering may sow seeds now. It is very attractive even when not in flower, the white, downy foliage showing to advantage when planted in clumps, either in the herbaceous border or in the wild garden. The crimson-flowering variety is the best to grow, and there is also a white-flowered variety. The flowering season is July and August. The blooms are suitable for use as cut flowers for decorative purposes.

Coltess Gem, etc., should have all faded blooms removed regularly, for if they are allowed to remain and form seeds the plants will be weakened.

Herbs.—Beds of herbs will require watering if the present hot, dry conditions continue. Remove all weeds that may be present, for if allowed to remain these will exhaust the soil and weaken the plants. The present is a suitable time in which to dry herbs. Basil, Marjoram, Sage, Thyme, etc., may now be cut and tied in bunches—the latter hung in an open, cool shed to dry. Later, the bunches may be stored in a dry room until required for use.

Spinach.—A final sowing of the round type of Spinach should now be made on well-cultivated ground. Allow a little more room between the rows for this sowing, as the plants will remain a longer time on the ground than those of former sowings, and will consequently require more room and light. A fortnight hence is time enough to make a sowing of the winter variety in northern districts.

B

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

NEVER having had at command either the skill, foresight, or material for carrying out a colour scheme in the herbaceous border, my feeling toward that system finds expression in a phrase some two thousand years old—to wit—*Non equidem invides: miror magis*. I envy it not; rather do I wonder at it. In my rude judgment the best flowering herbs possess so much individual beauty of form, colour and graceful carriage that it is better to enhance these qualities by selective grouping than to treat them according to the old wearisome plan of bedding out.

Nevertheless it must be admitted that unpleasant discord is very apt to occur in mixed planting, whereof a case in point presented itself this very morning as I looked from my bedroom window. High on a dry retaining wall is perched an old bush of *Moltkia petraea*, two feet high and twice as much across. It has taken well-nigh thirty years to attain these modest dimensions, but it was worth waiting for, seeing that in this mid-July it has hidden its sober, grey-green working garb under a mantle of exquisite blue. Nothing could be more satisfying individually than this pretty shrublet; but in a closely adjacent border a Larkspur has sent up thirteen spikes of clear Cambridge blue, five feet high, clashing grievously and dimming the rich soft hue of *Moltkia*. The latter, of course, cannot be dislodged from its perch, and the Larkspur is such a fine specimen that I cannot find it in my heart to move it.

Again; disastrous was the discord when, two or three years ago, a colony of *Hippeastrum* (*Habranthus*) *pratense* flared out intensely orange-vermilion in front of *Buddleia globosa*, these two fellow-countrymen flowering simultaneously. The bulbs were removed to other quarters, but some were overlooked and remained to repeat the offence last May.

The clear yellow panicles of *Senecio Greyii* accord ill with the cataract of soft apricot which *Tropaeolum polyphyllum* has poured over a bank from under the shrub; but they must just fight it out, the *Senecio* being too big to move and too handsome to destroy; while there is no herb more impossible to transplant than *T. polyphyllum*. The colour displayed by another of that family, *Tropaeolum speciosum*, is very brilliant, yet it has a quality which harmonises with every other. It ramps far and wide through the borders here, climbing a Holly to the height of twenty feet and clinging indiscriminately to any plant that will serve as a support; yet I have never known its carmine blossoms out of accord with others of any hue.

It was a lack of foresight that caused me last autumn to dump *Geranium anemonifolium*, the gift of a kind correspondent in the south, alongside of Mr. Hillier's pretty hybrid *Cistus* "Silver Pink," the strong tint of the *Geranium* according ill with the delicate hue of the *Cistus*; but it will be easy to shift the *Geranium*—if only one remembers at the right time!

Jarring colours occur in the shrubbery also; as when in June, *Rhododendron cinnabarinum* Roylei hung out myriad of dusky, crimson bells against a background of flaming orange Azalea. (Note that to ensure the best effect from the said *Rhododendron*, it should be so planted as to let it be viewed against the sun, the light shining through the fleshy corolla producing a very rich colour).

Such are some of the drawbacks to a chuck-and-chance-it style of planting, though happy effects often result from that discreditable practice. It was by pure chance that *Exochorda grandiflora* found itself next

to a good bush of *Rhododendron* Pink Pearl, and was enabled to enhance the purity of its own blossoms by waving them among the rosy trusses of its neighbour. *Calceolaria integrifolia* grows to considerable size in our western air, and it is by a happy accident that a large plant thereof is holding aloft its golden clusters at the foot of a tall, deep blue *Delphinium*. Equally unpremeditated and equally felicitous is the association of the Orange Lily, *L. croceum*, with the double-flowering form of *Geranium pratense*, which comes into flower just when the single form is passing away, causing me to waive my general objection to double-flowering wildings.

Campanula lactiflora, a veritable brigand if admitted to a flower garden, has taken riotous possession of a neglected corner which now brims over with hundreds of blue and grey-blue panicles, contrasting admirably with the mist of golden bloom that shrouds a huge bush of *Genista virgata* hard by.

Let me wind up this prose with a note on *Orchis foliosa*, like the *Genista* aforesaid a native of Madeira, but equally hardy in Britain. Give it moistish root-room and it makes a border plant of much merit; but to see it at its best it should be grown in grass—not the shaven sward of a lawn, but in a woodland bay where the soil is sappy. In such a place it will far outdo the splendour of our native *O. maculata* and *O. latifolia*. *Herbert Maxwell, Monreith.*

A VISIT TO BADMINTON, GRITTLETON, AND WESTONBIRT.

I RECENTLY had the pleasure of spending a few days in the hunting country of Badminton with an old friend of mine, Mr. S. T. Martin, gardener to His Grace the Duke of Beaufort, and, like all gardeners, I must needs take my recreation in seeing other gardens and meeting gardeners within a reasonable distance of Badminton.

I began my tour of inspection by looking over the gardens and park of Badminton. I was charmed with the park of this old-world place with its avenues of magnificent and stately trees affording vistas of beauty from all points of the compass, and at all angles.

BADMINTON has age, and age, like experience, cannot be bought time alone produces it. Not only the landscape gardener and forester will find things of interest and beauty, but the keen botanist would find himself amongst a wealth of interesting plants in this ancient demesne. The gardens and greenhouses are situated on rising ground with a southern aspect, enclosed and divided into several parts or blocks by brick walls, which I estimate are twenty feet in height, affording suitable aspects for all kinds of trained fruit trees. Mr. Martin, who is combining market work with his other duties, is planting young trained trees on the walls, and also large areas of Gooseberries, Currants, Strawberries, and Raspberries to supply a growing demand for high-class fruits. He has also a great demand for bedding plants of all kinds, which he grows by the thousand, *Salvias*, *Asters*, *Antirrhinums*, and so forth. Badminton is charmingly situated in lovely surroundings and full of interest to gardeners and naturalists.

GRITTLETON.—For years I had heard of the fame of Mr. Pitts of Grittleton Hall Gardens, so I looked forward to a visit to this place. My visit was favoured with good weather, and I was impressed with the appearance of the crops and the thoroughness with which the gardens were maintained. The park, fruit garden, and rockeries were all good. But the Carnations, *Schizanthus*,

Calceolarias, and seedling Orchids, which are grown by the thousand in all stages interested me most. Mr. Pitts is in the forefront of Orchid raisers and growers. By the time we had seen the fruit houses and the kitchen garden the shades of evening reminded us that the day was far spent, and we were six miles from Badminton. I departed after thanking Mr. and Mrs. Pitts for their kind hospitality and courtesies, and the privilege and pleasure of seeing Grittleton Gardens, which will ever be a red-letter day in my life.

WESTONBIRT.—The next day saw my host and myself admiring the many interesting things at Westonbirt. The head gardener, Mr. F. J. Clark, I first met at Aston Rowant House, Oxford, many years ago. I knew of his capabilities and felt assured I should be interested, benefited, and stimulated by what I should see. The *Hippeastrums*, seedling *Rhododendrons*, the nursery and herbaceous gardens, the kitchen and fruit gardens were all excellent. But to my taste the pleasure grounds came first in interest. No words can describe the beauty of the selection and arrangement of the trees and shrubs. My visit to Westonbirt formed a glorious finish to my holiday visit to Badminton. *S. Heaton.*

THE NEW NATIONAL PINETUM AT BEDGEBURY.

THE formation of a new National Collection of Conifers at Bedgebury, Kent, was referred to in *The Gardeners' Chronicle* of June 7, 1924, p. 332. We now learn from the *Kew Bulletin* (No. 7, 1925) that work on this site has commenced and, during the period March 17-21 of the present year, 315 species and varieties of *Abies*, *Tsuga*, *Pseudotsuga* and *Larix* were planted.

The planting extends over about eight acres of the top and north-east slope of a low hill. The ground had recently been cleared of a crop of Chestnut coppice twelve years old, with Oak standards seventy to ninety years old. Along one side was a belt of Scots Pine one hundred and ten to one hundred and twenty years old. Some of these Pines were left for shelter and a number of large ornamental Conifers and large Hollies were left for the same purpose.

The lower ground consists of good loam several feet deep, overlying sand; the loam on higher ground gradually diminishes in depth until on top of the hill it is only six inches to nine inches deep overlying hard sand bordering on sandstone, with here and there pieces of stone of varying size. In some parts the surface is covered with humus, whilst beneath the pines there is a thin layer of peat. The whole of the site is naturally well drained. The chief native plants at present apparent are Bracken and Bluebells.

Although the condition of the previous crop left no doubt as to the suitability of the ground for the new trees, the precaution was taken of digging holes three feet across and eighteen inches deep, with the bottom broken up, and of using humus about the roots of each tree. A considerable number of the trees planted were presented by Mr. Gerald Loder and by Mr. F. R. S. Balfour; others were purchased from Messrs. Hillier and Son, Winchester. The trees are as far as possible geographically arranged in their respective genera and each species forms a group. As a rule species are represented by from three to six plants and the average space between plants is twenty-four feet. Every plant is labelled and, as temporary protection against rabbits, each plant is surrounded by wire netting.

ALPINE GARDEN.

NOCCEAE STYLOSA (SYN. THLASPI STYLOSUM).

THIS alpine is endeared to some of us by its very early-flowering and its modest charms, unassuming, but none the less acceptable on that account. I first grew it under the name of *Iberis stylosa*, having procured seeds under that name; it was afterwards renamed *Thlaspi stylosum*, and is now included under *Noccaea*. It appealed to me from the first because the seedlings of spring, raised under glass, flowered all through a mild winter on sunny rockwork in sandy soil, and in spring bloomed still more freely: moreover, the plants survived several seasons although like some others of the *Thlaspi*s, it is not, as a rule, long lived.

It forms a small, loose tuft of *Iberis*-like leaves and little lilac flowers, not by any means showy but welcome in their season. Mr. Farrer spoke somewhat highly of it, and suggested a cool position for it. Much, of course, depends upon the climate of the district where it is grown, but with me it appeared to like a warm, sunny place. *Noccaea stylosa* is easily raised from seeds, which are, I think, procurable from a few seedsmen, at least they were comparatively recently. I prefer sowing them in pots under glass in spring, and transplanting the seedlings so soon as they are large enough in their permanent quarters.

ORIGANUM HYBRIDUM.

Index Kewensis refers *Origanum hybridum* to *O. sipyleum*, but there is undoubtedly considerable confusion among these dwarf Marjorams, and, as full descriptions of the respective plants called by this name are not easily deciphered I venture to cut the Gordian knot by calling the little flower to which I refer *Origanum hybridum*, by which it seems to be generally known in the trade.

Like most of the *Origanums* in our climate, it is not too reliable in very severe winters, but I grew it for many years near the base of a little, sunny, rock garden, where it was sheltered from north and east winds and where it thrived until one specially trying winter, when it died.

The plant I have always known as *O. hybridum* is about nine inches tall, and has somewhat greyish foliage. The flowers are very small indeed, but, as in the case of the other Marjorams the bracts constitute the ornamental part of the inflorescence. These are of a deep pink, and, although they do not constitute anything very striking, they are quite pretty in their way. The plant has the aroma usually associated with the Marjorams. It thrives in a sandy soil mixed with peat and leaf-mould and grit, and needs a warm sunny place, where it should flower during some months in autumn. Propagation is effected by cuttings. I should advise purchasers to endeavour to obtain their plants in pots. *S. Arnott*.

ERODIUM SUPRACANUM.

THIS exquisitely beautiful plant, quite one of the best of the Heron's-Bills, requires a hot and dry position in the Alpine garden, with a well-drained and sandy soil to root in. A surfacing of granite chippings will be advantageous; here, in the West of England, some protection from winter damp is imperative. The finely-cut leaves show a good imitation of hoar frost running along their veins, and they are in delightful contrast to the pinkish and exquisitely veined blooms. Only a few inches in height, two or three plants of *E. supracanum* established in a pan give a pretty effect and are ideal subjects for the Alpine house. As in the case with other *Erodiums*, propagation is effected by seeds or by division. Flowering through the summer months, I should class this *Erodium* as one of the most beautiful of a fine genus.—*Ralph E. Arnott*.

HARDY FLOWER BORDER.

PAPAVER BRACTEATUM.

THE Bracted Poppy, *Papaver bracteatum*, does not now appear to receive the notice to which it is entitled. This is probably due to the favour shown the now numerous varieties of *Papaver orientale*, the Oriental Poppy, but such a good garden plant ought never to be neglected by all who have good sized borders and who enjoy the brighter flowers of the summer season. It has been long known to me, and it was rather a surprise to find that it was introduced to this country a hundred years or so after *P. orientale*. It is one of the many good hardy flowers which have come to us from the Caucasus. I was delighted to see a number of plants of this noble Poppy in the garden of Mr. C. W. Ralston, at

against a background of the dark foliaged *Prunus pissardii*. It is advisable to provide such a background of dark foliage plants to display the upright spikes of pale sulphur-yellow flowers to advantage. This species is a native of Syria, and thrives in a well-drained and gritty soil in a sunny herbaceous border. It attains a height of from four feet to five feet, and produces well-branched stems and innumerable flowers, forming quite a symmetrical bush. *W. L.*

CEPHALARIA TATARICA.

CEPHALARIA TATARICA is a good old border plant of tall stature, still occasionally called *Scabiosa tatarica*, by which name it was known for a considerable time.

It closely resembles *Scabiosa* in form of flower, and that of the well-known *Scabiosa caucasica* may be taken as representing its shape. The flowers, however, of this

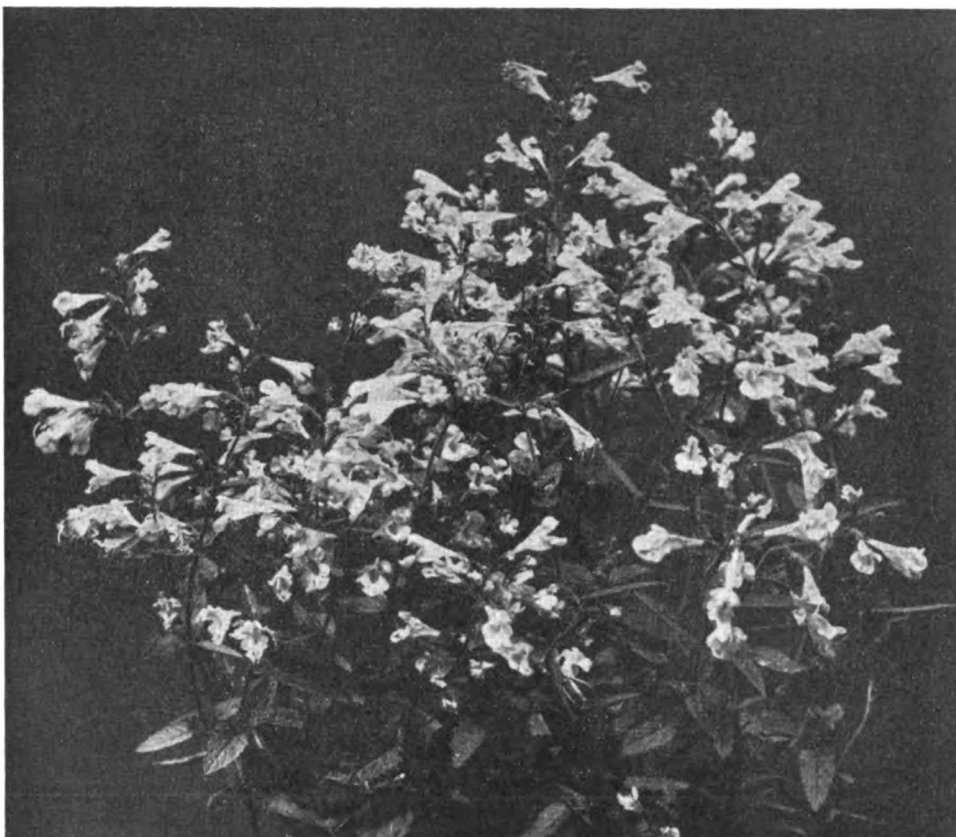


FIG. 28.—SALVIA DICHROA.

R.H.S. Award of Merit, July 14 (see pp. 58 and 63).

Dabton, Dumfriesshire, where Mrs. Ralston cultivates so successfully a splendid collection of good hardy subjects, admirably tended by that lady and the staff. I do not recollect ever having seen so many plants of *P. bracteatum* in a private garden before, and it was a real pleasure to see the large, deep scarlet flowers with their fine black blotch, each flower with the leafy bract at its base, on stems about four feet high. It is a nobler plant than *P. orientale*, fine as the latter is, and can be grown in almost any border of reasonably fertile soil. Like *P. orientale*, it does not always transplant well when large, but may be raised from seeds or root cuttings, and also by division in the case of large plants. *S. Arnott*.

DELPHINIUM ZALIL.

THE buds of *Delphinium Zalil* (syn. *D. sulphureum*), which expand during the present month of July, produce quite a fine effect

Cephalaria are of a soft, deep, creamy-yellow and borne on tall stems above the divided foliage. It is a good plant for the back of a border, and from June onwards continues to bloom for a long time. It ranges from five or six to eight feet in height, the latter being about its maximum stature in good soil.

The plant is undoubtedly very hardy in any soil and requires little attention, except removal of the underground shoots, where the plant is not wanted in other parts than its original situation.

Propagation is effected by division, and also by seeds when these are obtainable. It is not a specially showy plant, but of distinct appearance, and the bold-looking, one-sided flowers facing the onlooker are attractive and appreciated in the border. It may be added that a bold group of this plant in the wild garden is very effective. *S. Arnott*.

ORCHID NOTES AND GLEANINGS.

NEW ODONTIODAS.

WELL-DEVELOPED spikes of two to six flowers of the five following handsome new *Odontiodas* are sent by the raisers, Messrs. Charlesworth and Co., Ltd., Haywards Heath.

ODONTIODA GALATEA (ODA. ALCANTARA × ODM. ST. JAMES).—This is of a very rare type, the large flowers with very broad, nearly equal sepals and petals, being rich Tyrian-purple. The broad lip is bluish-white in front, changing to ruby-purple at the base. The crest is yellow and the back of the column white.

ODONTIODA DANTE (ODA. LAKONIA × ODM. ST. JAMES).—The sepals and petals of this variety are rich cherry-red with a violet shade and slight white lines. The lip is cream coloured, densely blotched with rosy-mauve.

ODONTIODA NESTOR (ODM. JASPER × ODA. HYPATIA).—The three-flowered inflorescence of this novelty bears large and well-formed flowers of dark ruby-red colour; the reverse side of the segments and the tip of the labellum are tinged with mauve. The column is pure white.

ODONTIODA MONICA (ODA. BREWII × ODA. LAMBEAUIANA).—This cross between two *Odontiodas* gives dark claret-red flowers with a rose-pink tip to the labellum, which is constricted in the middle, the broad orange crest expanding at the base.

ODONTIODA ST. AUBYN (ODA. CHARLES-WORTHII × ODA. COOKSONIAE).—A fine, three-flowered inflorescence of this very brightly coloured hybrid is sent. The flowers are bright vermilion-scarlet, lighter on the lip, which has a broad, ridged, yellow crest. This feature, and the more or less white column, is tolerably constant in *Odontoglossums* and *Odontiodas*.

CATTLEYA QUEEN MARY.

This beautiful white *Cattleya*, raised by crossing *C. Mendelii* alba and *C. Warneri* alba, was first shown by J. J. Holden, Esq., at the meeting of the Manchester and North of England Orchid Society in July, 1911, the small plant then shown securing a First-Class

Certificate. Since that date good specimens have been exhibited, and the plant has proved to be one of the best white hybrids.

The grand specimen shown at the R.H.S. meeting by Sir Herbert H. Leon, Bt., Bletchley Park (Orchid grower, Mr. J. T. Barker), on June 9, and for which a Cultural Commendation was awarded, proved it to be one of the finest and best *Cattleyas* seen for some time. The flowers in form approach *C. Warneri* alba, and are clear white with a chrome-yellow tinge in the base of the lip. The six spikes bore an aggregate of sixteen flowers.

ODONTOGLOSSUM ROSANTHA

C. J. LUCAS, Esq., Warnham Court, Horsham, sends the first flower of a charming new hybrid raised between *Odontoglossum Rossii* and *O. Panther* (crispum × percultum) which has the customary features of *O. Rossii*, which makes that section very dissimilar from the larger class of *Odontoglossum* hybrids.

The flower resembles that of *O. Rossii* in shape but is broader in all its parts. The sepals have broad, irregular bands of dark ruby-claret, the whitish ground showing between the coloured bands and at the margins and tips. The broad petals are ruby-claret with slight mauve markings between the blotches and at the tips. The broadly expanded front lobe of the lip is blue, the base white, and the large, wax-like crest cowslip yellow. The column is white on the inner side and pale blue above. The whole flower shows an unusual arrangement of rich colour.

CYPRIPEDIUM CURTISII VAR.

SANDERAE.

The albino form of the well-known *Cypripedium Curtisii* is a fine addition to any Orchid collection and has a special attraction to those who admire such beautiful *Cypripediums* as the hybrid *C. Maudiae* and its parents *C. callosum* var. *Sanderæ* and *C. Lawrenceanum* var. *Hyanum*. *C. Curtisii Sanderæ* is not difficult to cultivate in a moderately warm house and the fact that it flowers in the summer adds to its value. Messrs. J. Cypher and Sons have shown specimens at several provincial exhibitions during the present month.

NEW HYBRID ORCHIDS.

(Continued from May 30, p. 376.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Louisa ...	B.-C. Mrs. J. Leemann × C. Schilleriana ...	M. C. Maron.
Brasso-Laelio-Cattleya Plumion ...	B.-C. Pluto × L.-C. Endymion ...	Sanders.
Cattleya Ashlands ...	Dupreana × Tityus ...	R. Ashworth, Esq.
Cattleya Chelsea ...	Empress Frederick × General Pulteney ...	Flory & Black.
Cattleya Peregrina ...	Mossiae × Percivaliana ...	Sanders.
Cattleya Pompadour ...	Cecilia var. Louis Chalon × Mossiae ...	M. C. Maron.
Cymbidium Faith ...	Lady Colman var. Golden Queen × Queen of Gatten ...	Sir J. Colman, Bt.
Dendrobium Hercules ...	Prince Arthur × Thwaitesiae ...	Sir J. Colman, Bt.
Laelio-Cattleya Beatrice de Herriard ...	C. Veiris × L.-C. Etnick ...	Mrs. B. Jervoise.
Laelio-Cattleya Dainty Maid ...	L.-C. Mercia × L.-C. Goldcrest ...	C. J. Lucas, Esq.
Laelio-Cattleya Lugano ...	L.-C. eximia × C. Empress Frederick ...	Stuart Low & Co.
Laelio-Cattleya Montrose ...	C. Enid × L.-C. Pizarro ...	Flory & Black.
Laelio-Cattleya Orbus ...	L.-C. Appam × C. Venus ...	Charlesworth & Co.
Odontioda Brewthui ...	Brewii × Charlesworthii ...	A. Hammer, Esq.
Odontioda Dante ...	Oda. Lakonia × Odm. St. James ...	Charlesworth & Co.
Odontioda Galatea ...	Oda. Alcantara × Odm. St. James ...	Charlesworth & Co.
Odontioda Leone ...	Oda. Hypatia × Odm. percultum ...	Charlesworth & Co.
Odontioda Monica ...	Oda. Brewii × Oda. Lambeauiana ...	Charlesworth & Co.
Odontioda Nestor ...	Odm. Jasper × Oda. Hypatia ...	Charlesworth & Co.
Odontioda Red Admiral ...	Cochlidia Noezliana × Odm. Georgius Rex ...	Charlesworth & Co.
Odontioda St. Aubyn ...	Oda. Charlesworthii × Oda. Cooksoniae ...	Charlesworth & Co.
Odontioda Stone Age ...	Oda. Harryannum × Oda. rosedeliensis ...	G. W. Bird, Esq.
Odontoglossum crispospudsky ...	Risipo-Harryannum × Dusky Monarch ...	R. Paterson, Esq.
Odontoglossum Goza ...	King George V. × Lambeauianum ...	Sir J. Colman, Bt.
Odontoglossum Gwenifer ...	percultum × St. James ...	R. Gerrish, Esq.
Odontoglossum Harriathan ...	Harryannum × Leviathan ...	R. Paterson, Esq.
Odontoglossum Lady Colman ...	Lambeauianum × V.C. ...	Sir J. Colman, Bt.
Odontoglossum Lady Holmden ...	Lord Pirie × Amethyst ...	Sir J. Colman, Bt.
Odontoglossum Lambert ...	Lambeauianum × Laurenceanum ...	Sanders.
Odontoglossum Maharajah ...	eximium × majesticum ...	Sanders.
Odontoglossum Rossantha ...	Rossii × Panther ...	C. J. Lucas, Esq.
Odontoglossum Sheila Stephenson ...	crispum × Felicity ...	S. Stephenson Esq.
Odontoglossum Sunbelle ...	Watsonii × Saffron ...	S. & A. McBean.
Odontoglossum Thelma ...	eximium × Radiant ...	J. & A. McBean.
Odontoglossum Toreador ...	crispum × Laurentia ...	Charlesworth & Co.
Odontonia Cybele II. ...	Odontonia Dora × Odm. Georgius Rex ...	Charlesworth & Co.

ANNUALS FOR CONSERVATORY AND GREENHOUSE DECORATION.

ZINNIAS.

ALTHOUGH popular for summer bedding displays out-of-doors, Zinnias are not generally regarded as suitable for pot cultivation; nevertheless they may be used successfully for this purpose, although it is true they require careful management to obtain good results.

For pot culture the seeds are best sown in a temperature of about 60° at the beginning of March, using a light, rich compost for the purpose. When fit to handle the seedlings should be pricked off into pans or boxes of light, rich soil, still keeping them in a temperature of from 55° to 60°; in their younger stages of growth Zinnias need great care in watering, as they are very subject to damping off. As they increase in size they should be gradually accustomed to drier and more airy conditions. When large enough the young plants should be transferred to small sixty-sized pots, using a slightly heavier compost than before; at this stage great care is necessary, as the plants seem to resent root disturbance, and are even more subject to damping off than in the earlier stage; it therefore follows that great care must always be exercised in supplying water at the roots. A fairly dry, buoyant atmosphere should be maintained. As the plants increase in size and the stem becomes harder, there should be no further trouble from damping, although it must be remembered that careful watering is very essential at all stages of their cultivation.

Zinnias should be potted on as they require it, six-inch or seven-inch pots being a suitable size for flowering them in. The compost for the final potting should consist of three parts good mellow loam, with the addition of a little well-decayed leaf-soil, or old Mushroom-bed manure, and enough clean coarse sand to keep the whole porous; a five-inch potful of bone meal may also be added to every bushel of compost.

When they have well filled their flowering pots with roots Zinnias will benefit from an occasional application of diluted liquid farm-yard manure, varying with a little guano, or any other approved artificial fertiliser. As Zinnias are sun-loving plants they should be freely exposed to plenty of sunshine, although it may be necessary to afford shade for a short time during the hottest part of the day.

There are now many fine strains of Zinnias available in a wide range of colours. The large giant varieties attain a height of two-and-a-half feet, but there are dwarf strains which only grow about fifteen inches tall.

HELIOPHILA PILOSA.

This pretty, blue-flowered annual is very suitable for a small greenhouse, as it is of very slender habit, and grows from six inches to twelve inches tall; the stems require timely support with some slender twigs. Owing to its slender habit *Heliophila pilosa* is well suited for filling small hanging baskets.

The successful cultivation of this charming annual presents no difficulty. Seeds should be sown from the beginning to the middle of March, and five to eight seedlings should be pricked off directly in 48-sized pots, in which they should be flowered. It grows freely in any good potting compost.

DOWNINGIA (SYN. CLINTONIA) ELEGANS AND D. PULCHELLA.

THESE are two very beautiful, half-hardy annuals which one seldom sees in cultivation at the present day.

D. pulchella, with its showy blue and yellow flowers is specially beautiful for small hanging baskets. Seeds should be sown about

the middle of March in a cool greenhouse, and when fit to handle the seedlings should be pricked off into pans or shallow boxes. When large enough they may be transferred to 48-sized pots or small hanging baskets. As they only grow about six inches tall several plants may be placed in each receptacle. This plant is specially useful for the small, unheated greenhouse, grows freely in any good potting compost, and should be given perfectly cool conditions during all stages of its cultivation. *J. Coult.*

LILIUM DUCHARTREI VAR. FARRERI.

As a rule Lilies in bloom do not travel well, as anyone may see who habitually examines exhibits of such plants at flower shows, and it is not often that Fellows of the Royal Horticultural Society have an opportunity of seeing Lilies in such excellent form and so happily staged as were the Sutton Court hybrids of *L. Martagon* album and *L. Hansonii* at Vincent Square from Mr. R. O. Backhouse, on June 30, or Col. Messel's exhibit of *L. Duchartrei* var. *Farreri* on the 14th inst. The specimens of the last-named Lily were picked from a bed about thirty feet long and a yard wide, crowded with plants in bud and bloom, and the sight of hundreds of these flowers brings home to one the characteristically happy fitness of Farrer's name for the plant—the *Marble Martagon*. He wrote of it*: "This Lily haunts cool mountain slopes and river banks amid the coppice. I cannot perfectly recall the figure of *L. Davidii* (which I incline to believe this Lily to be) or I could be more certain as to what is, or is not, the name of this . . . but the dainty Lily could surely not be despised by anyone. With broader, clear green leaves, it is a match in habit for *L. tenuifolium* as that species grows here . . . It attains some fifteen inches in height, and carries one, two, or three pendant *Martagon* flowers of a cold, ivory, or paper-white, waxy in texture, speckled rather unnecessarily with maroon along the inner margins of the segments. The flowers are larger and fatter than those of *L. tenuifolium*, and I find it an attractive beauty as it hangs glacial and pure amid the scrub. *L. sp. F.183* abounds all up the Tao-ho district, particularly delighting in steep, shingly banks of loam amid light coppice, where its cold, bone-white Turk's caps have a glacial beauty amid the greenery in August, though dulled in detail by their freckling of fine crimson dots along the inner margins of the segments."

Farrer's name has become almost indissolubly associated with the *Marble Martagon* Lily, but, in point of fact, it is to Purdom, Farrer's colleague in the 1915 expedition, that the credit for its discovery should be given. That much is made clear by the following extract from a letter from Farrer at the time the present writer was investigating the identity of the Lilies numbered *F. 449*. It is dated December 7, 1917, and reads as follows:—"All is well. *F. 449* is, I am pretty certain, the same as *F. 183*: this last is the *Marble Martagon* collected by Purdom in the Joni valleys, while 449 was vague capsules collected by us both in the valleys opposite Satanes, on the way back to Da-Lai-Go in the very late back-end when no diagnosis was possible."

Although there was more than one species of Lily under the field ticket No. 449, it was not till 1921† that it was possible to say definitely that Farrer was right in thinking that the particular lot included the *Marble Martagon*. Indeed, the plants Mr. Comber manages so happily in Col. Messel's garden, were raised from seeds of *F. 449* (not 183) which Mr. F. Stern received from Farrer during the war. The plants raised at Farrer down from the seeds in question flowered in

due season and Mr. Stern sent seeds of them to Col. Messel. It is from these seeds that the Lilies shown at Vincent Square last year and again last week have been raised.

Farrer thought the freckling of the petals "unnecessary," and one can follow his train of thought, for it is usually so slight as to be almost negligible at a short distance away. Take away the freckling and the Lily becomes a dwarf, slender, thin-petalled *Martagon* album, without, however, quite the elegant character of the latter with its colour scheme of white, green and gold.

Though the flowers of the plants at Nymans are much alike, the leaves and habit show the customary variations. There are broad-leaved and narrow-leaved specimens, the former a characteristic of unflowered juvenile plants, for the taller growing more floriferous Lilies

Botanically, the Lily is referred by experts to *L. Duchartrei* but except that the fruits vary a good deal in shape, the variety seems fixed, and so far as the writer's experience goes, breeds true. Horticulturally, the two Lilies are different, for in typical *L. Duchartrei** the petals are strongly suffused and freckled with pale vinous colouring. The flowers are larger, too, than in the *Marble Martagon*; there are usually more of them, and the stems are often twice as high as in Farrer's Lily. The species is not so amenable to garden cultivation as Farrer's variety, and has not so far proved easy to keep through wet winters such as those of the last two years. *A. Grove.*

PELORIA IN CALCEOLARIAS.

LAST spring we grew at this station a considerable number of annual, hybrid *Calceolarias*. After having been treated several times with a thin solution of Harnstoff, a new and very powerful fertiliser produced by the Farbwerke, Ludwigshafen, Germany, they showed a remarkable vigour and developed large and finely coloured flowers. Most of these flowers were of the normal shape, but in a few cases striking examples of two types of peloria occurred, of which the accompanying drawing (see Fig. 31) shows one case. The flowers illustrated were produced on different plants. Certainly few people will, when looking at the illustration, realize at the first glance what kind of

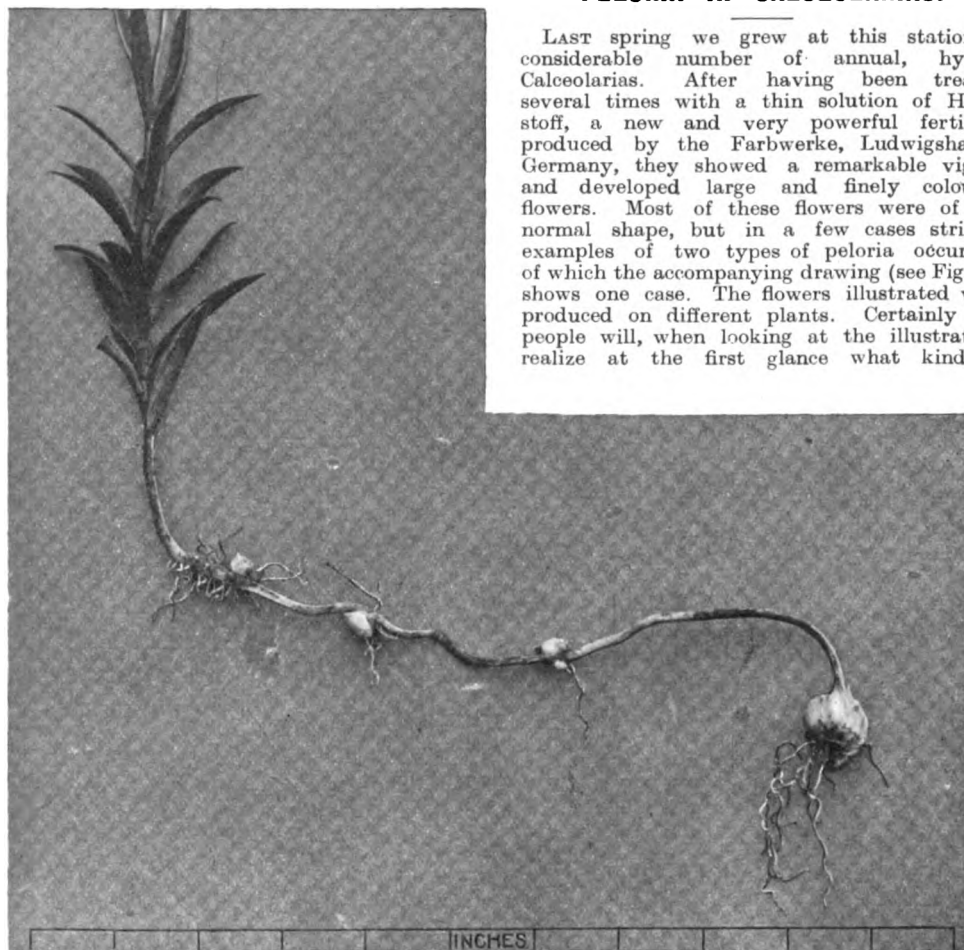


FIG. 29.—CREEPING STEM OF LILIUM DUCHARTREI.

which attain a height of about eighteen inches, seem consistently narrow-leaved.

Although this Lily has been in the hands of interested amateurs since the seeds were first distributed, ten years ago, no one, so far as the writer knows, can be said to have found it easy to manage until Col. Messel's gardener, Mr. Comber, hit upon a combination of conditions which obviously suit the plant in seasons so opposite as those of this year and last. In the writer's experience, this Lily is not for dry places or light soils; and as it is naturally a plant of thin woodland and even marshy meadows, that is only to be expected. It will probably grow where *Pyrola rotundifolia* grows, and though there is no lime at Nymans the writer has not found it intolerant of lime.

Farrer's *Marble Martagon* is not a Lily for cultivation in pots, for the stoloniferous growth, so well shown in Fig. 29, is so marked that as often as not the stem will travel round the pot and then try to push out through the drainage hole.

flowers they are. If a coloured figure could have been given the puzzle would perhaps be even more bewildering. It was always the terminal flower alone which became peliorate, and this is usually the case. They were perfectly tubular, five parted, and with a narrowed and very shallowly-lobed limb. Unfortunately, these flowers were not so effective on the plant as when detached, as they were nodding among the normal flowers, and so we did not save seeds from them.

In another case, not illustrated here, a peloria of a perfect two-lipped nature was developed, i.e., the two lips of the flower did not join into a tube, but were both equally large. The flower was upright and the two lips or pouches spread horizontally, exposing four stamens and the pistil.

Very likely similar cases of these two types of peloria may have been observed before, but many of your readers may be interested in them. *Alwin Berger, N.Y. State Agricultural Experiment Station, Geneva, N.Y.*

* *Bot. Mag.*, Vol. 132, t. 8,072 (1906).

* *Gard. Chron.*, Jan. 2, 1915, p. 1.

† *Gard. Chron.*, July 30, 1921, p. 63.

EDITORIAL NOTICES.

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Editors and Publisher.—Our correspondents would oblige by delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the **EDITORS, 5, Tavistock Street, Covent Garden, London.** Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

THE GARDEN IN ANTIQUITY.

VIII.—EARLY EGYPTIAN GARDEN CRAFT.

MAGIC and medicine, art and archaeology, history and tradition, alike bear witness to the fact that horticulture was highly developed in Ancient Egypt. Appeal may therefore be made not only to the early tombs and sepulchral monuments, but to the literature of neighbouring lands, such as Palestine and Assyria on the one hand, and Greece and Rome on the other. Herodotus and Horace assist us in our study. Virgil and Pliny afford us light, while from the associations between the early Hebrews and their southern neighbours, recorded in the Jewish Scriptures and the writings of Josephus, we can gather many hints. But the most reliable sources of information must ever be the monuments of the country itself, upon which we find portrayed the plants and flowers which were most esteemed, as well as the names by which they were known. Let us, therefore, first examine the evidence which is accessible to all, and then find our way to the sources which are not so readily consulted.

In the Old Testament we find many aids to the study of Egyptian horticulture; we have already studied the allusions to the Vine in Genesis XL. 9 (*The Gardeners' Chronicle*, May 30), and from the following chapter we learn that Corn was successfully cultivated. When famine came in Palestine it was to Egypt that Jacob sent for supplies. The value of straw for binding the clay in brickmaking had been discovered (Exodus V. 7 seq.), and Flax, as well as Barley, Wheat, and Rye, were cultivated (Exodus IX. 31-2). Hyssop is mentioned, and, if we may judge by the name and other evidence, the plant intended was the Caper-plant (*Capparis spinosa*), which is to be found plentifully in Egypt as well as in the Sinaitic peninsula and Palestine. The Caper-plant was in frequent use in this and neighbouring lands as a stimulant as well as a condiment. Among the Arabs it was held to have similar properties to those attributed to the Mandrake by the Jews of ancient and modern times. There is a variety which has been distinguished from the type by modern botanists as the Egyptian Caper (*Capparis aegyptiaca*). The most instructive passage, however, in the Jewish writings is to be found in the Book of Numbers (ch. XI. 5), "We remember the fish, which we did eat freely; the Cucumbers, and the Melons, and the Leeks, and the Onions, and the Garlic." Here we are in the very midst of savory herbs such as Eastern peoples prize most highly. Being articles of food which were peculiarly agreeable, they were supposed to be equally acceptable to their deities or objects of worship,

and this led to their most careful and extensive culture. Many allusions to this fact are to be found, alike in ancient and in modern literature. We must be content with one or two. The Roman satirist Juvenal sportively alludes to the subject:—

How Egypt mad with superstition grown,
Makes gods of monsters, but too well is known.
'Tis mortal sin an Onion to devour;
Each clove of Garlic has a sacred power,
Religious nation, sure, and bless'd abodes,
Where every garden is o'er run with gods.

The reference is to the abstention of the priests from the use of these plants as food; but such avoidance may be attributed to other causes than superstition. If the priests or other persons refused to eat Onions and Garlic, however, these were eaten by the populace generally with much zest. And, indeed, as the old traveller Haselquist has pointed out, no better Onions or Garlic, Cucumbers or Melons are to be found anywhere. Of the Onions he says, "Here they are sweet, in other countries they are nauseous and strong; here they are soft, whereas, in the northern and other parts they are hard, and their coats so compact that they are difficult of digestion. Hence they cannot in any place be eaten with less prejudice and more satisfaction than in Egypt." This agrees with my own personal experience of fifty years ago.

Sir E. A. Wallace Budge, dealing with the food of the people in ancient times, tells us that "among vegetables may be mentioned Onions, Cucumbers of various kinds, Beans, Peas, Lentils, Radishes, Pumpkins, water-Melons, Leeks, Garlic, roots of the Turnip and Carrot class, and vegetables belonging to the class of Egg-plant, Spinach," and the like. To such an extent were these grown that Rameses gave to certain temples, among other things, 514 vineyards, 71,000 bundles of Flax, upwards of nineteen million bundles of vegetables, some two million jars of honey and 5,279,552 bushels of corn. We could have no more striking evidence of the enterprise of the people in horticulture and agriculture, even though we grant that these figures show a touch of Oriental exaggeration.

It is recognized that in the course of the ages men have learned by experience what vegetables, fruits and cereals are best adapted for food in this or that locality. In hot climates pungent foods are favoured on account of their stimulating action. Hence we do not wonder at finding Onions and Garlic on the tables of Persian or Egyptian monarchs. Species of *Allium* were used in the Homeric age to give flavour to the beverages, as we learn from the following passage of the *Iliad* (XI., 625-30). "First of all she placed before them a table, fair, polished, with feet of iron, on which she put a charger of bronze and set out a Leek the savourer of drink, and yellow Honey, and meal of sacred Barley." The Greek word (*κρόμμυον*) is rendered in Latin by *Cepa* or *Allium*, and is translated in English by Onion, Leek or Garlic. Pope renders thus:—

A table first with azure feet she placed;
Whose ample orb a brazen charger graced;
Honey new-press'd, the sacred flour of Wheat,
And wholesome Garlic crown'd the savoury treat.

A species of Mallow was also cultivated for food.

There is an instructive passage in Herodotus which is apposite here. Speaking of the people living in the fenny parts of Egypt, he says that they have been the inventors of divers sorts of food: "For

when the river swells and overflows the plains great numbers of Lilies, which the Egyptians call Lotus, shoot up through the water. These they cut down, and after they are dried in the sun, take out the heart of the plant, which, resembling the pulp of a meakin, they mould into a paste, and bake as bread. They likewise eat the root. Another Lily grows in the same places, much like to a Rose, with a certain fruit found at the foot of the stem. The byblus they annually gather in the fens and divide into two parts: the head is reserved for other uses, but the lower part is eaten and publicly sold." He adds that they use an oil called Kiki, drawn from the fruit of a shrub which they sow on the borders of rivers and lakes. The Cyrenean Lotus mentioned (*Euterpe*, ch. XCVI.), is probably the *Rhamnus*, which gave its name to the Lotus-eaters, or Lotophagi, of classical fame, and is totally distinct from the *Nymphaea* or *Nelumbium* which grows in the water.

Fruits also were cultivated with equal care and success. We find Figs and Dates in use, together with the Pomegranate, Mulberries, and Grapes. Wine was made from some of these: syrups, cakes, and sweetmeats of others, and so the well-to-do were able to enjoy many luxuries.

Plants were also cultivated for medical purposes: "Powders and decoctions made from plants and seeds were largely used, and the piths of certain trees, Dates, Sycamore, Figs, and other fruits formed the principal ingredients of many prescriptions." Myrrh, the pips of the Citron, northern Cypress flowers and Cypress berries are mentioned among the substances which are useful for inflamed eyes and wrinkled brows—the latter being peculiarly odious to the ladies of fashion in those days as in these. Many of these plants came to be regarded as sacred, or had religious associations and usages attaching to them. To appreciate this branch of the subject fully involves long and careful study of old-time folk-lore, plant mythology, and comparative religion. We must be content with one or two of the best authentic facts.

Leaves of a species of *Cordia* or *Persea* are to be found at Edfu and elsewhere carved on the pillars of the temples. Into all the critical questions involved in the identification of the particular plant it is impossible to go, but learned authorities from the days of Delile (*Descr. de l'Egypte Historique Naturelle*, II., p. 191) down to the most recent times have had much to say of this sacred plant and its associations. It was devoted to the goddess Isis, who is represented with a crown of *Persea* in her hand. It is frequently found on monuments as a symbol of hope. Dierbach (*Flora Mythologique*) says "Sie war eine Pflanze der Kabbah und somit ein Trostbild bei dem Abschiede in die Unterwelt." Botanists have named it *Ximenia* or *Balanites aegyptiaca*, but these are not its only names, and much confusion exists respecting the identity of the plant in the different works of travellers and naturalists. Prof. de Gubernatis (*Myth. des Plantes*, II., p. 284) and Dierbach are among the many writers who may be consulted for fuller details.

The Tamarisk is another plant which figures largely in Egyptian flower-lore as it does elsewhere. From Pliny we learn that the priests were wont to wear coronets of this plant at certain of their festivals, and it has been named the Tamarisk of Osiris. It had the property of inspiring wisdom, and was held in the hand when the priest was in prophetic or mantic mood. In Egypt, as elsewhere, the art of medicine was frequently in the hands of the priests, they being the educated men of the day and race; and thus we find them attributing to such plants as *Aristolochia*, *Anagallis* and *Trigonella* medicinal properties. In this way medicinal plants came to be regarded as sacred, while sacred plants naturally possessed medicinal values.

Among the ancients the fondness for flowers sometimes amounted almost to a vice. Thus we are told that when Anthony supped with Cleopatra, the famous Queen of Egypt, even the floors of the guest chamber were strewn with fragrant flowers—a striking testimony to their knowledge of the gardener's art. Their hieroglyphics abound in floral symbols, which the Greeks seem to have turned to good account.

One of our great authorities on these subjects of a past generation writes (*Flora Historica*, Phillips, Vol. I., p. 203) that "the ancients used the Iris or Flag flower as a symbol of eloquence, and on this account it was, we presume, placed by the Egyptians

NOVELTIES IN FLORISTS' FLOWERS.

SALVIA SPLENDENS VAR. HARBINGER.

NOTEWORTHY additions to the list of plants usually raised annually from seeds have not been numerous of late, but the new form of *Salvia splendens*, known as Harbinger, is a great acquisition. Hitherto the variety Zurich has been the most popular, but it was not at all satisfactory from seeds, the resultant plants being too vigorous and often failing to give good results for bedding purposes. It is more

makes a charming bed. The flat effect can be remedied and the beauty of the whole enhanced by using tall plants of *Nierembergia frutescens* as dot plants. Beds of *Petunias* revel in the present hot, dry weather and do not seem to object to dust-dry conditions at the roots. In fact, such beds are not improved by artificial watering.

CHRYSANTHEMUM LEUCANTHEMUM LACINIATUM OSTRICH PLUME.

UNDER this clumsy title is hidden a first-rate garden plant that our seedsmen have practically ignored. It is a German novelty



FIG. 30.—NEW ENTRANCE GATES TO THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, WISLEY; ERECTED TO THE MEMORY OF THE REV. W. WILKS (see p. 61)

on the brow of the Sphinx, as we have seen in the collection of ancient statuary at the Louvre in Paris," where several of the Sphinxes have the Iris flower sculptured on the brow. He also alludes to the Mignonette (Vol. II., p. 154) as a fragrant weed of Egypt introduced within recent years into the gardens of Europe.

My notes and references, the gleanings of half a century, are far from being exhausted, but, as the garden-craft of other lands yet remains to be studied, it will perhaps be felt that Egyptian horticulture has had its fair share of attention. Of its groves and arbours, its fountains and parterres much might be written, but those who wish to pursue the study further will find the references already given enough to aid them in their own independent research. *Hilderic Friend.*

satisfactory from cuttings, and although it often fails to make an early display, generally makes a good autumn bed.

In about eight weeks from seed sowing this new variety is in full flower, and it is equally satisfactory from cuttings and has proved so excellent an introduction that no other form of *splendens* is worth troubling about.

PETUNIA SILVER LILAC.

I CONSIDER this is the best seed novelty of recent years. Originally offered in 1924 by a continental firm it is already hidden under a variety of names. It is easily raised from a February sowing and comes practically true from seeds. The colour is a delightful shade of lilac or pale lavender. The habit is compact and in the mass it

sent out three years ago. We have many hundreds of plants in flower in our parks now and they are a great attraction to many. The plant will flower the first year from seed if sown early, and in the second year will be nearly four feet in height—a mass of flowers and of the greatest value for cutting or garden effect. While no two forms are exactly alike almost every plant is worth retaining, and the poorest of them is far in advance of such named sorts as *Kenneth*, *Robinsii*, and others offered by the trade. The plant is quite perennial and is a seed novelty of outstanding merit.

This is a very charming plant for the hardy flower border, and where flowers are needed for cutting in quantity it is first-class, especially where the light arrangement of blooms is essential.

AGERATUM LITTLE BLUE CLOUD.

THIS received an Award of Merit from the Royal Horticultural Society on June 23. It is a most useful and pleasing plant, the colour being a great improvement on the old type. Last autumn stock plants were purchased from the raisers and several hundred plants were propagated; these have been most satisfactory. Seeds were also obtained and sown in March of this year, but as a seed novelty it is most disappointing, as the plants vary in height from about four inches to a foot. Whether the habit of this useful variety can be so fixed that it will come true from seeds is rather doubtful, but if the dwarf, compact habit of the plants shown for award is desired, this seems to be obtainable only from plants propagated by cuttings or division. *T. Hay, Hyde Park.*

TREES AND SHRUBS.

BUDDLEIA COLVILLEI.

As a result of the sunny weather of the last month, this fine flowering shrub from the Himalayas is flowering more freely than it has done for some years, and it is only in a season of this kind that we realize what the great Sir Joseph Hooker saw in it, when he said this was "the handsomest of all Himalayan shrubs." The flowers, which are produced at the tips of the young shoots, are of a deep rose colour, with a white throat, the individual flowers measuring nearly an inch across; they are carried in a drooping cluster or panicle nearly six inches long, composed of from thirty to forty blooms, which have been likened to those of Pentstemons.

Buddleia Colvillei grows freely on the west coast of Scotland, and does not need the protection of a wall, indeed, one plant so placed for many years never flowered at all, as it had been subjected to the annual pruning which is usually meted out to *B. variabilis* with success, but which simply meant cutting away all the prospective flowering shoots of *B. Colvillei*. This error was rectified a few years ago and since then the plant has flowered each season, increasing in height until it now overtops the wall by nearly six feet, and is thus seen to advantage from both sides, forming a most pleasing feature when covered by hundreds of its drooping panicles of rosy flowers.

In the open other plants have stood unharmed for many years, and are now nearly eighteen feet high, and to all appearances as hardy here as the better known *B. globosa* from Chili, which is also flowering most profusely this season, its golden-yellow balls forming a pleasing contrast to the flowers of its less well-known relative. *Buddleia Colvillei* was discovered by Sir Joseph Hooker in 1849 and is a native of the Sikkim Himalaya where it is found up to an altitude of 12,000 feet. The species first flowered in the British Isles in the late Mr. W. E. Gumbleton's garden, at Belgrove, near Cork, 1892. *A. T. Harrison, Culzean Castle, Gardens.*

PLAGIANTHUS LYALLII.

FOR about twenty years I have had a specimen of *Plagianthus Lyallii* which I obtained originally from Mr. Bathgate of Dunedin, in 1904. I send you a specimen in order to prove that this beautiful shrub is hardy at Floraire, Geneva, where the winters are very severe. The plant is now three metres high and has never received protection of any sort. But in my specimen the flowers are not shortly stalked, nor are the leaves, and so I wonder whether my plant is identical with *Plagianthus Lyallii* as figured in *The Gardeners' Chronicle* of August 25th, 1888, p. 209. Except in regard to length of stalk it seems identical. Perhaps, with the aid of the specimen sent you may

be able to determine whether I have the true species or a variety of it. *H. Correvon.*

We sent M. Correvon's specimen to Mr. A. Osborn, at Kew, who sends the following note:—

Reliable authorities, including Cheeseman in his *Flora of New Zealand*, and Bean in *Trees and Shrubs Hardy in the British Isles*, quote both leaf and flower of *Plagianthus Lyallii* as having considerable stalks. The specimen sent by M. Correvon exactly agrees with the old specimen of *P. Lyalli* var. *glabrata* in the botanical collection at Kew. The form with downy leaves is recognised as the type *P. Lyallii*. It is evidently a variable plant as Cheeseman, in the Appendix to the *Flora of New Zealand*, described another form as *P. Lyallii* var. *ribifolia*. In illustrating a spray in both *The Gardeners' Chronicle* (August 25, 1888, p. 209) and *Bean Trees and Shrubs, etc.* (vol. II., p. 199), the artists have considered the pose of the flower rather than the actual length of the flower stalks. Cheeseman gives the latter as one to two inches long, which agrees with those I have just measured on the plants at Kew.

SOME NOTABLE TREES.

It is well known that wonderful specimens of Conifers flourish in Perthshire. The finest collection I saw during a recent visit was at Scone Palace, where Mr. Macnaughton is in charge of the interesting and well-kept gardens there. One particularly interesting tree pointed out to me was said to be the first Douglas Fir planted in Scotland. It is in healthy condition. Some trees which particularly attracted my attention are the following; the measurements given in all cases represent the height, except where otherwise stated:—

Abies cephalonica, well furnished, sixty-two feet; *A. concolor*, a good bold tree, sixty-five feet; *A. nobilis*, one of which is a massive tree of about one hundred feet; *A. pinsapo*, with its deep green foliage reminding one of a *Lycopod*, sixty-five feet; *A. sachalinensis*, a very graceful young tree with glaucous foliage, eighteen feet—this species is said to be too tender for general planting; *A. Veitchii*, a deep green, handsome pyramid, forty-two feet; several good forms of *Cupressus Lawsoniana*, about sixty feet; *C. nootkatensis*, the same height; *Juniperus sabina*, a single plant, making a bold, rich green mass ten feet high, with a spread of thirty feet; four *Picea sitchensis*, one hundred feet, with trunks six feet diameter at base; *Picea Omorika*, a beautifully furnished pyramid with foliage deep green above and silvery beneath, twenty-five feet; *Pinus monticola*, one hundred feet; *P. ponderosa*, seventy feet, with curiously twisted and curled branches; *Sequoia gigantea*, over eighty feet, with trunks nearly six feet in diameter at base—the younger specimens of this are usually perfect pyramids, but the more mature trees I have seen generally show a pronounced convex outline. There are also several good, though not particularly large, *Libocedrus decurrens*. It is rather curious that a tree of such columnar form attaining considerable height should frequently, I believe usually, divide into two or more main branches at an early stage. *Tsuga Albertiana*, ninety feet, has a spread of sixty feet at the base, and is a magnificent Hemlock Fir somewhat resembling *Cedrus Deodara* in its foliage and pendulous branchlets.

From Scone I went to Murthly Castle, staying the night near Dunkeld. Needless to say I visited the site of the famous "Parent Larches" near the Cathedral. Of these trees, planted in 1738, only one now survives. It has lost some of its branches but has healthy foliage. Four large branches stand out

horizontally from the main trunk, and from these are several vertical growths, giving a rather curious effect. The base of a second tree which was removed a few years ago after being damaged, I believe, by lightning, is on view near the surviving tree, and measures about seven feet in diameter. Only six yards away from the surviving Larch stands an Oak as large as itself. This Oak is not clearly seen in some old illustrations of the Larches, and it is remarkable that these trees, which must have jostled each other for nearly two centuries, should both have attained such dimensions.

Two other trees in the locality also interested me. Behind the Birnam Hotel on the bank of the Tay is a grand old Sycamore which has as neighbour a venerable Oak known as the last Oak of Birnam forest. The Sycamore is perhaps the more majestic tree, and is still full of vigour, covered with deep green foliage and flowers.

On the evening of my visit there was a loud humming of bees gathering nectar. The girth of the trunk at five feet is twenty-one feet four inches, and the head is about seventy feet in height and of similar span. There are many fine Sycamores all over this part of Scotland. They appear to be the predominating tree of the countryside, with the Wych Elm a good second.

At Murthly Castle two features are especially noteworthy. One is the splendid collection of Douglas Fir. There must be several thousands of these in the grounds immediately surrounding the Castle, magnificent trees one hundred or more feet high, with handsome, rugged trunks more than a yard across at the base. Most are of the normal deep green colour, but a great number have glaucous foliage.

The imposing avenues of Conifers are the other special feature of Murthly. The finest perhaps is the one by the main entrance, which must be over half a mile in length. The width of the avenue is twenty-four yards, and the trees are thirty-five yards apart in the rows. Nearly every tree is a perfect specimen from fifty to sixty feet in height. This avenue is composed chiefly of various species of *Abies*, including *nobilis* and *grandis* and Douglas Firs.

There is also a mixed avenue which includes *Abies*, *Sequoia*, and *Pinus*. Another is of *Abies nobilis*, about eighty trees, sixty-five feet high. Another contains about forty specimens of *Araucaria* fifty-five feet high, very fine but beginning to lose their lower branches. *Cedrus Deodara* in considerable numbers border some of the grass walks. A long walk bordered by an avenue of sombre old Yews leads to the mausoleum. A brighter but formal effect is a fine curve of fifty or so good bold *Cupressus Lawsoniana erecta viridis*, forty feet high. When happily placed such fine specimens of this well-known but distinct tree are very valuable for formal effect combined with cheerful colouring and pleasing outline. One tree at least had some branches showing reversion to the typical *C. Lawsoniana* foliage. There are several good trees of *Juniperus virginiana*, over thirty-five feet, exhibiting the acicular form of leaves amongst the normal scale-like foliage. Other good trees noted were *Abies cephalonica*, eighty feet; *A. grandis*, one hundred feet; *A. magnifica*, sixty-five feet; *Picea sitchensis*, one hundred feet; and *Tsuga Albertiana*, the same height.

Dalkeith Palace was another place I visited. The Gardens are now let to a market gardener and are therefore not of the same horticultural interest as in earlier days, but most of the trees remain and many of these are well worth seeing. Near the Palace are an extraordinary number of Yews of several kinds, the largest trees being the common *Taxus baccata*. Many of them are very beautiful, and my attention was particularly drawn to their variety of form. Considerable variation in habit may always be seen in a bed of

seedling Yews, and equal variation, but of course much more pronounced, can be observed amongst the large trees at Dalkeith. Hollies are also numerous. I noticed a beautiful tree of *Cupressus nootkatensis* about forty feet high, a broad, well-furnished pyramid.

One of the most remarkable trees in these grounds is the old, spreading *Laburnum vulgare*, which is described in Elwes' and Henry's *The Trees of Great Britain and Ireland*, and also referred to by Mr. W. J. Bean, in the *Kew Bulletin* for 1906. This tree forms a mass about twenty-five feet high and sixty feet across. There are twelve or so main branches from near ground level averaging one foot diameter, and several lesser ones. These divide into a thicket of small branches. The tree is in flourishing condition and was covered with bloom when I saw it. Less picturesque but still exceptional is another *Laburnum* growing in a rather enclosed position. I measured this to be fifty feet, almost a record in height for a *Laburnum* I should think. It gives rise to several main branches from about a yard above the ground level, and these bear innumerable young shoots, although much of the top growth is dead.

In conclusion I may mention a curious Lombardy Poplar I saw at Perth, on the boundary of the recreation ground known as the South Inch. This tree, about ninety feet high and showing dead wood at the top, is of normal shape, except for a large growth which juts out horizontally about nine feet from the ground-level and extends for a width of about ten feet. This growth has been formed by a series of branches, diminishing in size, all of which have extended some distance horizontally before giving rise to vertical growth. *Alfred B. Melles, Ypres.*

NOTICES OF BOOKS.

Tropical Gardening and Planting.*

THE appearance of the third edition of Mr. Macmillan's well-known and valuable handbook on tropical gardening and planting affords some indication of the great interest taken in gardening in tropical countries, for although it has been prepared with special reference to Ceylon, it treats of such a multiplicity of subjects, and describes so many plants, that its contents may be said to be of almost universal application throughout the tropics.

It is highly appropriate that such a book should have originated in Ceylon, for that celebrated island, with its variety of elevations and diverse climates, has not only a rich indigenous flora, but has become the home of numerous introduced species, thanks to the love of gardening amongst its European residents and the enterprise of the Royal Botanic Gardens at Peradeniya. In his capacity as Superintendent of these renowned gardens the author of this handbook has had unique opportunities for acquiring a first-hand knowledge of the vast number of plants cultivable in the tropics, besides which he has had going on all around him planting enterprises of the first importance connected with such valuable commercial products as Tea, Rubber, Coconuts, and the like. This rich store of information has been utilised in the preparation of the handbook; and in this edition, which is far in advance of its predecessors, the matter has been rearranged, and to a large extent rewritten and augmented. The result is a book of six hundred pages packed with information, carefully cross-referenced so as to avoid repetition and to save space, and provided with a very complete index of over twenty thousand references. The printers of the book have also lent their aid, and, by a judicious selection of types, have been able

to compress the matter into a convenient compass without the sacrifice of legibility.

The illustrations, some four hundred in number, are in most cases from the author's photographs, and it is with much regret that one learns from the preface that his extensive collection of negatives of plant subjects suffered disaster from attacks by termites during his absence from Ceylon. The three coloured plates are of *Amherstia nobilis*, *Cassia nodosa*, and *Poinciana regia* ("Flamboyante"), considered by the author the three most beautiful of tropical flowering trees.

The subject matter of the book is divided into five sections, each section being subdivided into chapters, of which there are thirty-nine in all. Section one deals with the general principles underlying horticulture and planting, and describes the various cultural operations, the tools employed, and the methods of laying out, together with selections of plants for forming hedges or boundaries.

In section two are given classified lists of ornamental plants for all kinds of situations and purposes, arranged in alphabetical order in groups according to their nature or uses. This arrangement, which is carried out all through the book, is very convenient, and is particularly helpful to those unacquainted with plants or botanical nomenclature. These lists include many subjects known to gardeners in this country only as pot plants, but also included are a number of annuals which are grown out-of-doors here in summer; also Roses, which it is interesting to learn succeed in Ceylon, not only in the cool temperature at a high elevation but also down to sea-level, and produce flowers nearly the whole year round which, however, lack the substance and fragrance of those produced in cooler climes.

Fruits, vegetables, and fodder plants are dealt with in section three, and here again the subjects are numerous and varied. In the case of tropical fruits the author points out that the majority have undergone but little improvement by selection or cultivation, and in many cases have a large proportion of seeds to edible matter, and in some cases have a disagreeable odour.

The Vine, we learn, has been cultivated with some degree of success in this dry northern part of Ceylon, but for the most part the climate is too humid for this subject. The vegetables of the tropics are also numerous and diverse, comprising a large number of pulses, Cucurbits, and tuberous-rooted plants, whilst at the higher elevations, and during the cool seasons in the lowlands, many of our common vegetables can be grown with success. It is interesting to learn that the Cabbage is commonly propagated from cuttings in the tropics, and that plants thus produced are considered less susceptible to club-root than seedlings. The Potato is said to be hardly worth growing in Ceylon at a lower elevation than 4,000 feet.

A chapter in this section is devoted to the spices for which Ceylon is celebrated. These are too numerous to mention here, as most of the world's commercial spices can be grown in Ceylon, but Cardamoms and Cinnamon are natives, and are nowhere else produced so abundantly.

The numerous products that occupy the attention of European planters in tropical countries, and that give employment to vast numbers of native inhabitants, are dealt with in section four. This is a most valuable section, but it has necessarily a greater appeal to the commercial planter than to the gardener. The general reader will, however, here find much interesting information regarding such common, but nevertheless valuable products as Tea, Rubber, Coconuts, etc., which are produced in vast quantities in Ceylon to the value of many millions of pounds sterling annually.

Lest the gardener at home should be inclined to envy what he may consider to be his more fortunate confrere in the tropics, he

should glance at the chapters in this section devoted to pests and diseases, where he will find that gardeners in the tropics have to contend with numerous noxious weeds, insects, and animal pests, as well as fungous diseases, to say nothing of land leeches, which attack the gardener himself! All these pests and diseases are duly listed and classified, and appropriate fungicides, insecticides, and remedial measures are recommended.

The concluding chapters are devoted to miscellaneous information and tables, and here the author has thoughtfully included a number of recipes for making jams and preserves from tropical fruits, with a view to making the handbook useful to lady residents in the tropics.

It will be gathered from the above remarks that the handbook covers a wide scope, and that the author (an Old Kowite) has spared no pains in making it as useful as it is comprehensive. In certain special subjects he has had the assistance of a number of scientific men in Ceylon, and this assistance he duly acknowledges in the preface.

It need hardly be pointed out that all European residents in tropical countries should find the book invaluable, whilst commercial men and others at home interested in tropical products should also find it a store-house of interesting and useful information. *H. Spooner.*

Lorette Pruning.*

ALL gardeners have heard of the Lorette system of pruning, but comparatively few in this country have had an opportunity of becoming sufficiently acquainted with the details of the method to put it into practice. They will, therefore, welcome Mr. Dykes' excellent translation of M. Lorette's book. The history of the system is interesting. Louis Lorette was for a good many years chief instructor in practical horticulture at the School of Agriculture, Wagonville, near Douai, in the north-east of France. Whilst still a young man he noticed that standard Pears in orchards, which were never pruned at all, but allowed to grow naturally, generally bloomed freely, whilst the pyramid and other well-trained trees in private gardens, pruned on orthodox lines, often flowered shyly. He set himself to devise a method of pruning which would give him trained trees as fruitful as the naturally-grown standards. He succeeded to such an extraordinary degree with the trees in the school garden that his work soon began to attract attention. It is probable, however, that M. Lorette would have continued in his modest course had not M. Truffaut, editor of the horticultural journal *Jardinage*, literally dragged him and his system into the limelight. Lorette pruning has since been adopted by many amateurs and professionals; but it has also had severe critics. To judge from the reproductions of photographs of Lorette-pruned trees which adorn this book, the critics would seem to have little ground for their objections. The trees are remarkably full of bloom, and the blossom clusters lie very close to the branches, and consist of an extraordinary number of flowers. It is claimed that they bloom fully every year, and that the flowers are so profuse that they protect one another, so that some always escape frost in an unfavourable season. Moreover, the trees are said to be so prolific that severe thinning of the fruit is always essential; and annual manuring is needed to enable them to stand the strain of regular bearing.

It is hardly possible to grasp the system by merely reading the book through once or twice. The directions, indeed, seem to be rather confusing, but they could, no doubt, be applied without much difficulty

* *Tropical Gardening and Planting, with special reference to Ceylon.* By H. F. Macmillan, F.L.S. (Superintendent, Royal Botanic Gardens, Ceylon), 3rd. edn., pp. xv. + 594. London: The Times of Ceylon Co., Ltd., 1925. Price 37s. 6d.

* *The Lorette System of Pruning.* By Louis Lorette. Translated by W. R. Dykes, M.A., F.R.S.L. London: Martin Hopkinson & Co. 166 pp., Illustrated. Price 7/6 net.

by any gardener who set himself to master them, with the trees before him and the book at hand. It seems to the present writer, however, that the time given for the various operations would have to be retarded in this country, for very few shoots, especially on Apples, had, in early July, reached the stage for the pruning recommended for mid-June. This is, however, a late season, and in any case the matter could easily be adjusted.

It is a feature of the Lorette system that no winter pruning is done. The shortening of the extension growths is delayed until some time in April, when they have made about two-inches of new wood. They are then pruned lightly with the result that numerous *dards*, *brindilles*, and a few more vigorous shoots, are encouraged to form. In June, any of the lateral shoots that have reached the thickness of an ordinary pencil (and are, therefore, half woody) are cut back hard with the knife, leaving only a quarter-inch to three-eighths-of-an-inch, including one or two small leaves, if possible. The object is to stimulate the stipulary eyes or buds (those in the axils of the stipules), which are considered to give rise to more fruitful growths than the eyes situated in the axils of the main leaves. In July, August, and, if necessary, in September, the trees are gone over again for the pruning of any fresh shoots that have attained pencil thickness. This pruning gives rise, during the same season, to *dards* (really fruit spurs in the making), which quickly become fruitful.

This is a very rough outline of the system. Various refinements and modifications are adopted to induce fruitfulness and correct faults. *Brindilles* (weak shoots), for instance, are bent round and tied in full length to develop the buds, and incisions are made above the buds to increase the vigour of the branches, or below them to decrease vigour. Keen gardeners will enjoy putting these methods to the test, and they will find the illustrations very helpful. *M. G.*

MELON DISEASES.

A LEAFLET (No. 125) published by the Ministry of Agriculture contains the following accounts of canker and wilt diseases of Melons.

"Canker" belongs to the class of "foot-rot" diseases. The tissues of the stem at or about soil level become brown and soft, and finally rot away. The disease may appear at almost any stage in the life of the plant, but it is most frequent about the time when fruit is beginning to be carried. It is caused by bacteria which are enabled to attack the stem of the plant at this point on account of the excessively wet conditions which are frequently allowed to obtain there.

In order to prevent the disease it is essential that the base of the plant should be kept as dry as possible, and in watering great care should be taken to prevent wetting of the stem. This is perhaps best prevented by setting out each young plant in the bed in a small pot with the bottom knocked out, or by placing a metal collar, about five inches in diameter, around the stem. When watering, care should be taken that no water is poured within the collar or the margin of the pot. When the disease has once set in it may be controlled, if it has not progressed too far, by dusting the base of the plant with a powder composed of ten parts of dry slaked lime, two to three parts of flowers of sulphur and an equivalent amount of finely ground bluestone (copper sulphate). It may be necessary to repeat the process of dusting at intervals during the season, and a fresh application

should be made when the bed is top-dressed.

The two wilt diseases of Melons are caused by fungi belonging to the genera *Verticillium* and *Fusarium* respectively. The symptoms are much alike in the two cases. Commencing with the lower leaves, a yellowing and wilting sets in which gradually spreads to the upper parts of the plant. The fungus mycelium within the plant chokes up the water-conducting channels and, in addition, probably secretes some poisonous substance. Finally the whole plant becomes wilted and dies. *Verticillium* wilt is favoured by a comparatively low temperature, whilst the contrary is the case with *Fusarium* wilt. Giving increased shade and raising the temperature of the house will to a large extent control *Verticillium* wilt, but *Fusarium* wilt is very difficult to control. In both cases the

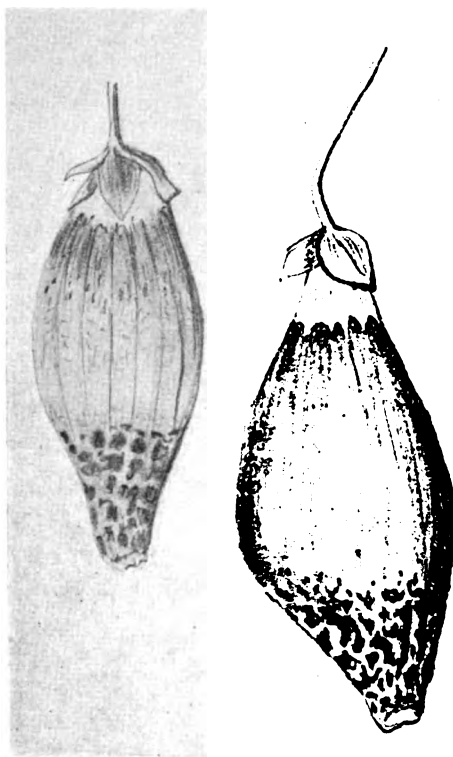


FIG. 31.—PELORATE FLOWERS OF CALCEOLARIA (see p. 69).

disease is contracted from the soil and the remains of dead, affected plants may become sources of future infection if not properly disposed of. Plants suffering from *Fusarium* wilt should be removed and burned. Before putting others in their places the soil should be thoroughly watered with Cheshunt Compound. Soil in which diseased plants have been grown should not be used for a further crop unless it has been thoroughly disinfected and sterilised.

VEGETABLE GARDEN.

LATE CARROTS.

THE cultivation of intermediate and long Carrots has become almost impossible in many gardens owing to the ravages of the Carrot Fly. There are effective preventives of this dreadful pest but the matter of their application demands more time than depleted staffs can afford, for which reason increasing reliance is being placed upon a sowing at the present time. Carrots sown during July almost invariably yield a good crop.

A Short Horn variety should be selected on account of its early maturing qualities. The

quickest and cleanest root growth is made in a warm, moderately rich and friable loam. Such a desirable trinity of conditions is not easy to secure, but it should be the aim of the cultivator. Gardeners know that it is inadvisable to add farmyard manure to the soil immediately before sowing Carrots.

I have just cleared a crop of Broad Beans and I propose to follow them with Carrots, simply digging the soil and breaking it down to a good texture. The drills should be drawn nine inches asunder and one-and-a-half inch in depth. It is well to sow the seeds somewhat thickly, for it is getting old at this season of the year and consequently not quite so reliable. The seedlings should be thinned to six inches apart before they become crowded in the drill.

This method of culture yields good roots for winter use. I find the variety New Model to have no equal. It is above the average size for a Short Horn Carrot, of good colour and practically coreless. *Geo. H. Copley, N.D.H.*

ENDIVE.

WHERE Endive is appreciated, there can be no doubt that it is one of the best subjects in existence for filling the salad bowl during the winter. In some respects it is superior to the Lettuce, because of its greater hardness, and also of the ease attendant on the production of large, white hearts at a time when like results with Lettuce are practically impossible.

The broad-leaved Batavian kind bears the closest resemblance to Lettuce, and if the stock whence the seeds are obtained is good and the plants are grown well it quite surpasses in flavour and appearance the best Lettuce that can be put on the table at the same time. This Endive may be used alone or in conjunction with Lettuce and other small saladings. Where Endive is grown extensively, the Cabbage varieties of Lettuce should be cultivated in preference to the Cos kind for mixing with them, as the soft, buttery flavour acts as a corrective to the bitterness of the Endive.

The moss-curl variety is of remarkably fine and delicate flavour, but it is not suitable for winter use, say, after the end of October, as its curly, moss-like leaves retain the moisture so long that it is a matter of extreme difficulty to blanch them because they rot quickly.

Where constant supplies of Endive are required, a pinch of seed should be sown at intervals from the middle of July until the end of August. The crop should be grown on well-manured and deeply-dug soil in an open position. So soon as the plants have completed their growth they may be tied up for blanching as required and supplies may be obtained from the open quarter until about November.

So soon as there is danger of sharp frost, however, the plants should be lifted carefully with good balls of soil and packed together in a Mushroom-house, or in any shed where they can have the advantage of a cool, comparatively dry atmosphere.

For small quantities, an eight-inch pot turned over the plant makes an efficient protection, but where large quantities are grown it is scarcely practicable. For large quantities the following is a good method of protecting by easily-obtainable material:—Grow the plants in beds six-feet wide, and when the time arrives to protect them, fix a nine-inch board on each side of the bed by nailing cross-pieces at intervals of three-feet or four-feet; on this place medium meshed wire-netting, and cover with Bracken or leaves. If dry weather is chosen for this work, it makes a very efficient protection, and supplies are easily obtained by beginning at one end and rolling back the netting as required. There is no difficulty in keeping supplies going until January by this means. Where frames are available, later sown plants may be grown in them to continue supplies after plants grown in the open are finished. *W. Auton.*

HOME CORRESPONDENCE.

Black Currants.—With reference to Mr. E. Neal's remarks on page 5 in *Gard. Chron.* of July 4, I ask, Why go to the unnecessary trouble of inserting Black Currant cuttings this month, entailing the trouble of using or making up temporary frames and glass lights, syringing and shading? Perhaps Mr. Neal does not realise that most establishments have not sufficient staff to do such a lot of unnecessary work in these days and it is up to every gardener to use his short supply of labour to better advantage than by syringing and shading Black Currant cuttings when propagation may be done to quite as good or better advantage by inserting the cuttings when other work is not so pressing. Good bushes should develop plenty of young growths each year from the ground, which they would fail to do were the bottom buds rubbed off as Mr. Neal suggests. During the past few years I have inserted thousands of Black Currant cuttings and rooted ninety-eight per cent. of them. Cuttings taken when the bushes are pruned in the autumn are inserted in the open ground and if time permits they are made and put in at that time, if not, they are placed in bundles in holes close to a shed or some shelter so that the cuttings may be made during less valuable time or in wet weather. During wet weather the prepared cuttings are tied in bundles of about twenty to thirty each and placed in the ground again until time can be spared to insert them finally. Such cuttings have remained from October to February and when taken out to plant are all callused over and root very quickly. A line is put along the ground, a small trench made with a spade and the cuttings inserted six inches to eight inches apart as deeply as one can push them in, without bending them, on to a firm base. The soil is placed back with the foot and pressed firmly. The line is then moved a distance of fifteen inches and another row inserted. All that is necessary afterwards is hoeing to keep down weeds and promote a fine tilth on the surface. The following autumn the cuttings are cut off to within two inches of the ground and if the bottom buds are not rubbed off they will throw up several strong shoots from the ground, developing into fine young bushes suitable for planting in their permanent quarters when two years old. It may seem that it involves a lot of trouble to first place the prunings in the soil and then the made cuttings in the ground, but that is quite unnecessary provided time and weather permit of planting being done at the time of pruning. When dealing with large quantities it is an advantage to deal with them as time permits, however, whether large or small quantities are rooted; it is certainly more methodical than putting the cuttings in this month. I presume after they have rooted in the frame they need replanting in nursery beds, which means more time wasted than just inserting the cutting in the ground where they may remain until they are ready for planting out. A. W. Pearce, *Sudeley Castle Gardens, Winchcombe.*

The Largest Wellingtonia.—I was much interested in the account of the tree of *Wellingtonia gigantea* in the *New Forest* referred to by your correspondent. I have a very fine specimen of this tree in my garden, and it is, I believe, one of the first planted in this country. My gardener has taken a rough measurement four feet from the ground, and found it about sixteen feet in circumference. I should think it equals in height the one in the *New Forest*, as it is quite a landmark for some distance around our village, but I do not know anyone who could give me its correct height. T. Fletcher, *The Maples, Ottershaw, Chertsey, Surrey.*

SOCIETIES.

BATH HORTICULTURAL.

JULY 8 and 9.—The annual show of the recently revived Bath Horticultural Society which was held in association with the Provincial Show of the N.R.S. in the beautiful Royal Victoria Park, at Bath, was conspicuously successful. Two large marquees were filled with really excellent exhibits, and there was a gratifying attendance. In the capable hands of the energetic Hon. Secretary, Mr. F. J. Cashnella, the arrangements worked very smoothly.

OPEN CLASSES.

The semicircular groups of miscellaneous plants evoked a deal of well deserved admiration for they were tastefully arranged and included well-grown plants, particularly *Caladiums*, *Crotons*, *Clerodendron fallax*, and *Humea elegans*. The first prize was won by Mr. C. H. SMITH and Messrs. J. TUCKER AND SON were second. The groups of *Begonias* also reached a high standard of excellence, and these plants arranged with Ferns and other foliage plants made a very fascinating display. Premier honours were won by Mr. T. CRAWFORD.

Specimen *Fuchsias* were the best we have seen for many years and recalled the fine specimens that were so popular in years gone by. Messrs. J. TUCKER AND SON are to be congratulated upon their first prize exhibit and also their six specimen Ferns and Zonal *Pelargoniums*.

The class for a collection of hardy border flowers was also a delightful feature of the show and Messrs. H. AND W. EVANS, who won the first prize had a most charming group which contained particularly well-grown spikes of *Lychnis chalcedonica*, *Spiraea (Astilbe)* *Venus*, *Hemerocallis* *Sir Michael Foster*, *H. citrina* *Baroni*, *Lilium candidum* and *Armeria Ruby*. Messrs. B. LADHAMS, LTD., were second. The first prize group of *Delphiniums* was set up by Messrs. BLACKMORE AND LANGDON, whose excellent exhibit included some handsome spikes of *Sir Douglas Haig*, *Edward Bromet* and *Blue Boy*.

Sweet Peas were also especially well shown, and the chief honours were won by SIR RANDOLF BAKER, Bart. (gr. Mr. A. E. Usher), *Ranston*, *Blandford*, who won first prizes with a display, and for eighteen bunches, twelve bunches and six bunches in the open classes, with vases of magnificent blooms. His principal varieties were *Wild Rose*, *Powerscourt*, *Wizard*, *Mrs. Arnold Hitchcock*, *Warrior*, *Fordhook Orange*, *Valentine*, *Royal Purple*, *Royal Scot*, and *Charming*. Mr. C. WALL was a good second in the first-named class and he included *Champagne*, *Mrs. Tom Jones* and *Mammoth*. In the other class Capt. JARRAT THORPE, *Hucclecote*, showed large spikes of *Valentine*, *Royal Scot*, *Mrs. Tom Jones*, *Comrade* and other good varieties.

In the classes for amateurs only, Mr. F. CHURCHWARD, *Dacombe*, *Newton Abbot*, was first with twelve splendid bunches of *Royal Scot*, *Pimpernel*, *Royal Purple*, *La France*, and *Wild Rose*, and Capt. JARRAT THORPE was second. There was very strong competition with six bunches and Miss PEACOCK was first with excellent vases of such sorts as *Youth*, *Crimson King*, and *Hebe*; while Mr. E. WILLIS in his very good second prize half dozen included *George Shawyer*, *Valentine* and *Mrs. Arnold Hitchcock*. The best single vase of Sweet Peas in this section was of *Wizard*, shown by Capt. JARRAT THORPE.

The first prize group of cut *Carnations*, arranged by Mr. C. WALL, was particularly meritorious and included excellent vases of *Laddie*, *Glorious*, and other good varieties.

In the dinner table decoration class, which apparently permitted the use of any flower, Mrs. COLSTON HALE was first with a dainty arrangement of *Irish Elegance* *Rose* and yellow foliage; while in the class which required the use of Sweet Peas, Miss HALE

won the first prize with a charming arrangement of mixed varieties.

The collections of vegetables were excellent. Sir RANDOLF BAKER, in the open classes, was first with splendid *Duke of Albany Peas*, *Kidney Beans*, *Cauliflower* and other seasonable kinds.

NON-COMPETITIVE COLLECTIONS.

Not the least important section of the show was that filled by the trade growers who set up admirable groups. Messrs. KELWAY AND SON and Messrs. HEWITT, LTD., displayed magnificent spikes of *Delphiniums*. Tuberous-rooted *Begonias* of great excellence were staged by Messrs. BLACKMORE AND LANGDON. Mr. F. W. GULLICK contributed a large group of splendid Sweet Peas and hardy border flowers. An effective group of *Conifers* and other hardy trees and shrubs was arranged by Messrs. JOHN SCOTT AND CO. Mr. W. H. COLES showed particularly good *Hydrangeas* and *Palms*. Border flowers were displayed by Messrs. ALFRED WATERS AND SON, Messrs. BAKERS, LTD., Mr. J. MILBURN and Mr. R. ADAMS. Messrs. MAXWELL AND BEALE had an effective rock garden. Messrs. JARMAN AND CO. arranged collections of *Lavateras*, *Sweet Sultans*, *Delphiniums*, and *Roses*, and Messrs. W. T. PAYNE AND SON showed excellent Sweet Peas.

WINDSOR, ETON AND DISTRICT ROSE AND HORTICULTURAL.

JULY 11.—The Windsor Show has always been a favourite with Rose growers, for there is to be won the greatly-to-be-desired "King's Challenge Cup." During past years it has been won by Messrs. B. R. CANT AND SONS, Messrs. D. PRIOR AND SON and Messrs. ALEX. DICKSON AND SONS. This year the honour has fallen to Messrs. FRANK CANT AND CO. for the first time. At Windsor there are also the Prince of Wales's Cup for Sweet Peas, the Windsor Cup for amateur rosarians and quite a number of other trophies to be won.

It is pleasant to be able to record that the competition on the present occasion was well worthy of the honours to be won and the opinion of the judges was that it was the finest show held at Windsor for many years.

On this occasion His Majesty most thoughtfully threw open the higher Castle Slopes so that many visitors enjoyed their beauty and the distant views. The arrangements of the show were excellent and the untiring Hon. Secretary, Mr. J. Harding, must have felt compensated for his hard work by the success which attended the show.

OPEN CLASSES.

The following classes are open to all England and the first was devoted to the competition for the King's Challenge Cup which requires forty-eight distinct varieties of exhibition *Roses*. As we have remarked, the high honour was won by Messrs. F. CANT AND CO., who set up a really excellent collection. Their very best varieties were *Mrs. Elisha Hicks*, *Dean Hole*, *Mrs. Henry Bowles*, *Bessie Brown*, *Premier*, *Mrs. Wallace*, *H. Rowe*, *Mrs. Amy Hammond* and *Lady Barham*. Messrs. B. R. CANT AND SONS were a good second in this champion class and they included beautiful examples of *Mrs. G. Marriott*, *George Dickson*, *Mrs. Henry Bowles*, *Bessie Chaplin* and *Dean Hole*. Messrs. D. PRIOR AND SON were third.

The competition in the class for eighteen Tea and Noisette varieties was also very good and the exhibits reached a high standard of excellence. The first prize was won by Mr. GEORGE PRINCE, who had lovely blooms of *Medea*, *Mrs. H. Taylor*, *Mrs. C. Hall*, *W. R. Smith* and *White Maman Cochet*. In the second prize collection of Mr. E. J. HICKS there were good examples of *W. R. Smith*, *Mrs. Foley*

Hobbs, Maman Cochet and Lady Plymouth. Messrs. D. PRIOR AND SON were third.

The class for twelve varieties, three blooms of each, was also well contested. The first prize was won by Messrs. B. R. CANT AND SONS, who included excellent sets of George Dickson, Capt. Kilbee Stuart, H. V. Machin and A. Hartman, of gorgeous colouring, with Mrs. George Norwood, Louise Crette and Mrs. George Marriott. The good second prize collection of Messrs. D. PRIOR AND SON included fine trios of Mrs. George Marriott, Mrs. R. D. McClure, Venus, Martha Drew and Mabel Turner. Messrs. FRANK CANT AND CO. were third in this strong class.

There were many exhibits of twelve blooms of any H.P. and H.T. varieties and the first prize was won by Messrs. F. CANT AND CO. with splendid examples of Mrs. Elisha Hicks. Mr. C. GREGORY was second with a very good dozen of Candeur Lyonnaise and Messrs. B. R. CANT AND SONS were third with lovely blooms of Mrs. George Marriott.

Of the three exhibits of twelve blooms of any Tea Rose the best was of Mrs. Foley Hobbs, shown by MR. GEORGE PRINCE and this was of excellent quality. Mr. Hicks was second and Messrs. D. PRIOR AND SON were third with the same variety.

MR. GEORGE PRINCE won the first prizes in the class for twelve blooms each of any crimson and any white variety, displayed in two baskets. His blooms of George Dickson were very effective. Messrs. A. WARNER AND SON were second.

The four exhibits of twelve bunches of decorative Roses made a good display. MR. HENRY STREET, who won the first prize, included Ophelia, Sunstar, Lulu, and Golden Emblem. In the second prize collection of Messrs. A. WARNER AND SON there were very good vases of Los Angeles, Ophelia, Isobel and Golden Ophelia.

AMATEURS' CLASSES.

Generally the quality of the Roses in this section was very good and those of Dr. TURNBULL, Colchester, which won for him the Windsor Challenge Cup, reached a high standard of excellence. In fact, the Silver Medal, which is open for the best blooms in the whole of the show, was awarded to a specimen of Mrs. C. Lamplough in this exhibit. Dr. Turnbull's twenty-four excellent blooms also included Mrs. H. R. Darlington, George Dickson, F. N. Thompson, Mrs. George Marriott, Cleveland, and Wm. Shean. Mr. F. H. FIELDGATE, Colchester, was second, and he included Avoca, Louise Crette, Her Majesty, Coronation, and George Dickson of considerable merit. DR. TURNBULL was also first with three blooms each of nine varieties, and this was an excellent exhibit. His trios of Mrs. George Marriott, Mrs. C. Lamplough, Mrs. H. R. Darlington, and J. G. Glassford were excellent. Mr. F. H. FIELDGATE was second.

The best six Tea Roses were shown by Dr. TURNBULL who had lovely specimens of Maman Cochet, Mrs. Campbell Hall, and White Maman Cochet. Mrs. HENRY BALFOUR was second. Mr. F. H. FIELDGATE had the best dozen blooms of exhibition varieties, and in Class 13 Mr. A. L. WIGAN was similarly successful. The best six blooms of any H.T. variety were of J. L. Mock, shown by Mr. W. BURNERS, who also was first with six excellent vases of Roses. Mr. J. TILLER, who staged most creditable blooms of Lady Inchiquin, George Dickson, Mrs. G. Marriott, and Marcia Stanhope, had the best six blooms in the local classes.

Sweet Peas are always a popular section at Windsor, and on the present occasion there were many excellent vases exhibited. Sir RANDOLPH BAKER, Bart. (gr. Mr. A. E. Usher), Ranston, Blandford, won the Prince of Wales's Cup for the second time in succession, and he also had the best twelve bunches. In the former class his fifteen vases included excellent vases of W. J. Unwin, Powerscourt, Mammoth, Wizard, Mrs.

Arnold Hitchcock, Warrior, and Constance Hinton. Major C. B. KRABBE (gr. Mr. A. W. Gomer), Calcot Grange, Reading, who was second in this strong class included Bunty, Hebe, Wizard, Warrior, and Purple Perfection, while Wild Rose, Wizard, Powerscourt, and Valentine were particularly good in the latter class. Major LUBBOCK, who was second, had excellent vases of Valentine, Mrs. Arnold Hitchcock, and Field-Marshal.

Mrs. SHIRLEY WOOLMER, Warfield Priory, Bracknell, won the Fortescue Cup with twelve splendid bunches of Sweet Peas, and in this class Col. H. L. SCOTT, who was a good second, had, in Warrior, the best bunch in the section.

The best six vases of hardy flowers were shown by Col. H. L. SCOTT, who included good spikes of *Lilium candidum*, *Delphiniums*, *Phlox* and *Gaillardias*.

In the ladies' classes Mrs. CHARLTON, Yiewsley, was very successful and she won the first prizes for a dinner table decoration and a basket of Roses; in both instances she used Madame Butterfly Roses very effectively.

The collections of vegetables were of higher quality than might have been expected after such a long drought. Particularly good exhibits were made by LORD ORMATHWAITE (gr. Mr. A. Webb), Bracknell; Mr. A. COOMBS and Mr. V. BRANT.

TRADE DISPLAYS.

The various trade exhibits were such a splendid feature of the show that at the Society's luncheon, Sir William Carter, the Mayor of Windsor, paid a very graceful tribute to the exhibitors and offered them the heartiest thanks of the Society. Last year Lady Carter gave the Society a handsome Challenge Cup to be held annually by the exhibitor of the best non-competitive collection of flowers. This cup was again won by Mr. E. HICKS with a magnificent group of Roses which so delighted the donor of the Cup that she desired the Society to change the conditions and permit the Cup to be won outright after any three wins and Mr. HICKS's successes to count in the new conditions. Mr. HICKS's handsome group included lovely stands of Los Angeles, Ophelia, Sir Claud Denoyel, The Queen Alexandra Rose, Golden Emblem, and Climbing Lady Hillingdon.

An artistic group of hardy border flowers was set up by Mr. CHARLES TURNER, who also showed a large quantity of excellent Roses. Mr. H. YANDELL had a particularly extensive collection of splendid *Violas*. A large exhibit of lovely Sweet Peas set up by Messrs. BIDE AND SONS included several charming varieties of their own raising. Mr. J. C. ALLGROVE had a very tasteful group of *Scabious*, *Phloxes*, *Delphiniums*, *Lavatera* *Olbia rosea* and other hardy flowers. Attractive groups of Roses were arranged by the Rev. J. H. PEMBERTON, Messrs. BRINKMAN BROS., Mr. G. LILLEY and Mr. C. H. HURRELL.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

THE fourth horticultural show of the season organised by the French National Horticultural Society in the reserved pavilion of the Exhibition of Decorative Art in Paris had an equal success with its three predecessors.

As before, the central space was occupied by MM. VILMORIN-ANDRIEUX ET CIE, of Paris, with an immense group of regular shape, artistically displayed, and having for its central feature three hollow squares, reached by artificial steps decorated with Indian *Carnations* and provided with balustrades painted in "Opera," or magenta, the fashionable colour, and garlanded with flowering *Nasturtiums*. In the centre was a carpet of *Azalea*-flowered *Godetia* of a particularly brilliant pink, double white *Clarkia elegans*, and *Chrysanthemum segetum Gloria*; all round was a varied border of different kinds of flowers. There was also a fine collection of cut Sweet Peas and groups of

Iris Kaempferi, in which the varieties *Heracles* (double, with a large lilac-blue flower), *Astarte* (double, beautiful deep violet), and *Ganymede* (double, lilac-pink) were especially remarkable.

M. WEISS, of St. Cloud, had a little garden in the Japanese style with a decoration of white stones and variously coloured pebbles, and furnished with different species of *Cacti*, *Agaves* and *Aloes*.

MM. CAYEUX ET LE CLERC, of Paris, showed a fine mixed group at the entrance to the pavilion, and MM. Férard, also of Paris, had some beautiful *Cannas* and a group of *Lilium regale*.

M. NOMBLOT-BRUNEAU, of Bourg-la-Reine, had an impressive display of fruiting orchard trees, *Cherries*, *Apples*, *Figs*, etc., besides a fine collection of *Cherries* on dishes in which *Bigarreau Jaboulay* and *Bigarreau Alfred Nomblot* were noticeable.

In the little greenhouse built on the banks of the Seine M. CHANTRIER of Montfontaine, was showing a good collection of *Brazilian Caladiums*, and a number of hot-house plants such as *Carludovicia plicata*, *Sphocrogyne cinnamomea*, and the curious *Polypodium vacciniifolium* with long, pendant stolons.

Orchids were well represented, and deserve special mention. In the excellent collection sent by Messrs. STUART LOW AND CO., of Bush Hill Park, England, to which a first prize was awarded, there were *Laelio-Cattleya Damos*, lilac, with violet-purple labellum; *Sophro-Laelio-Cattleya Anzac*, very fine, of intense colouring, with a deep red labellum; *Brasso-Laelio-Cattleya Ancona*, pale yellow; *Jupiter*, with violet-coloured labellum; *Joan Armeniaci*, a chamois-yellow flower; *Laelio-Cattleya Aphrodite*, white with violet-coloured labellum; a fine *Odontoglossum Williamsii*; *Anguloa Clowesii*, with large yellow flowers; and the curious *Bulbophyllum virescens*, with mobile labellum, and *B. barbigerrum*, whose flowers move at the slightest zephyr.

MM. MARON, of Brunoy, showed *Laelio-Cattleya Eximia*, pure white with deep violet-red labellum; *Brasso-Cattleya Minc*, Charles Maron alba, quite white, with a greenish centre; *Brasso-Cattleya Dunkerkii*, also white, with violet-coloured labellum, and many others.

Among those shown by M. MARCOZ, also of Brunoy, were *Odontioda Mercedes*, *Cattleya Maroc*, with a large lilac flower, the labellum yellow tinted in the centre, to which was awarded the Julien Potin Cup for the best Orchid in the Show, and *Odontioda Criolitta*, with a large flower spotted with purple. M. PERRIN, of Clamart, obtained two Certificates of Merit for *Odontioda Chanteclere*, of a pretty bright red colour, and *Odontioda eximium*, with very deep red spots on a white ground.

M. JULIEN POTIN of Neuilly, sent a fine collection of unnamed hybrid *Cattleya* seedlings, and M. LE BLEVENEC of Bois-Colombes, and MM. VACHEROT ET LECOUFFE, of Boissy-St.-Leger, fine groups of *Laelio-Cattleya*. A. M.

NEWPORT AND DISTRICT HORTICULTURAL.

THE annual Rose Show of the Newport and District Horticultural Society was held in the Grounds of Nant Coch, the residence of Alderman F. Phillips, on Thursday, the 25th ult. The profits of the Show were in aid of the Royal Gwent Hospital. The exhibition resulted in some keen competition.

In the class for eighteen blooms, in not fewer than six varieties, the first prize was won by Mr. ERNEST HICKS, Wallingford; second, Messrs. ENGLISH AND SON; and third, Messrs. W. TRESEDER, LTD. These three competitors were again successful in the class for eighteen blooms of distinct Tea or hybrid Tea Varieties, but in this case Messrs. TRESEDER, LTD., and Messrs. ENGLISH AND SON changed places.

In the class for twelve blooms in not

fewer than four varieties, Messrs. ENGLISH gained first honours with Mr. ERNEST HICKS and Messrs. TRESEDER second and third prizewinners respectively. Mr. HICKS showed the best twelve new Roses, distinct, introduced since January 1, 1921, and he also won in the classes for twelve blooms of any single new Rose introduced since January 1, 1921, and for three vases of Rambler or Polyantha varieties.

In the amateur classes, Mr. E. EVANS, Newport, excelled for twelve blooms, distinct, followed by Mr. ALLAN GIBBS, Lisvane, who was placed first for twelve blooms in not fewer than four varieties. Mr. E. F. BROWN, Newport, who was second in this class was first for nine blooms in not fewer than three varieties.

The Hospital Cup, offered for the best eighteen blooms in not fewer than six varieties, was won by Mr. E. HICKS, Wallingford. The South Wales Argus Cup, offered for the best exhibit in the Amateurs' classes was won by Mr. E. EVANS, and the Clarry Cup, for the best twelve blooms in not fewer than four varieties was won by Mr. T. COLE, Newport.

NATIONAL SWEET PEA.

JULY 16 and 17—In spite of the prolonged drought—almost unparalleled in living memory—there was a magnificent show of Sweet Peas at the Royal Horticultural Society's Hall, Westminster, on the occasion of the Annual Show of the Society. The entries were so numerous that many classes had to be staged in the annexe, and the hall, filled with countless thousands of such blooms as no other country can show, presented a most charming appearance. The new classes for amateurs who do the actual work entailed in growing the blooms and also the extension of the Novices' classes were very popular. The arrangements worked so smoothly that it was found possible to open the door earlier than the advertised time.

The social side of the meeting included a luncheon on the first day, and an outing to view the trials of novelties and visit Hampton Court on the second day. Both were well attended. Mr. Edward Sherwood, the Society's President, filled the chair at the luncheon and extended a hearty welcome to Mr. Lester L. Morse, the head of the well known firm of wholesale seedsmen of San Francisco, who has for many years been a Vice-President of the Society. Mr. Morse, in a humorous speech recalled his previous visits to the N.S.P.S. Shows and exhibited with evident pride and pleasure the Society's Gold Medal which he had worn on his watch chain since the New York Exposition of 1915 when the medal, sent from London, was presented to him. He said that the present show of Sweet Peas was the most magnificent he had ever seen.

At the Trials ground the members were particularly interested in the collection of varieties, raised before the Society was formed, which were grown to illustrate the great advance which had been made during the past twenty-five years.

Messrs. ROBERT BOLTON AND SON "made history" by winning both the Eastbourne Cup and the Bath Cup; the former for the second successive year. Sir RANDOLF BAKER, Bart., won a Sutton Cup for the seventh successive year, and Mr. J. RANDALL won the Walter Voss Cup outright.

GROUPS OF SWEET PEAS.

From the spectacular point of view the large trade collections of Sweet Peas were the most important feature of the hall and there were thirteen collections in the two classes. In the Eastbourne Cup Class, which provided a space of fifteen feet by four and a half feet, the Cup-winning collection of Messrs. ROBERT BOLTON AND SON was a most delightful display of superb flowers. They gave special prominence to Gold Crest,

Royal Pink, and Peggy, amongst their newest varieties, and also had magnificent vases of Angèle, Mammoth, Picture, Powerscourt, Supreme and Wizard. A large Gold Medal was awarded to Messrs. SUTTON AND SONS for a very charming arrangement of excellent Sweet Peas. Their varieties included Hebe, Mrs. Arnold Hitchcock, Valentine, Youth, Doris, Hawmark Pink, La France, Wild Rose, Tangerine, and Crimson King.

Gold Medals were awarded to Messrs. IRELAND AND HITCHCOCK, and Messrs. DOBBIE AND CO. for charming collections of such sorts as Lord Lascelles, Mammoth, Youth, Mascott's Purple, Annie Ireland, Grenadier, Ruby, Royal Sovereign, Miss California, Mary Pickford, Tangerine Improved, Wizard, Mascott's White and Charming. Messrs. J. CARTER AND CO. were awarded a Silver Medal for a tastefully arranged group of the best standard varieties.



FIG. 32.—MESSRS. ROBERT BOLTON AND SON'S GROUP OF SWEET PEAS, Which won The Eastbourne Cup at the N.S.P.S. Show on July 16

The Bath Cup Class, which requires Sweet Peas grown without any protection or shading and arranged on a space of twelve feet by four and a half feet, was the more popular with the trade and the eight excellent collections filled the whole of the side of the hall. In the superb display which won the Cup, Messrs. ROBERT BOLTON AND SON gave special prominence to Wembley, their Gold Medal variety of last year, Ivory, Picture, Royal Pink, Black Bess, Constance Hinton, Mrs. Tom Jones, Pink Perfection, R. F. Felton, Tangerine Improved and Youth.

Large Gold Medals were awarded to Messrs. DOBBIE AND CO., to Messrs. E. W. KING AND CO., and to Messrs. SUTTON AND SONS. Messrs. DOBBIE AND CO. showed similar varieties to those they had in the Eastbourne Cup Class, and, if anything, the arrangement was rather more graceful. The associations of Miss California and Wembley, of Royal Scot and Rose Maiden, and of Royal Sovereign and Dobbie's Cream were particularly successful. Messrs. SUTTON AND SONS also displayed many of the same varieties as in the larger class, with Shell Pink and

Giant White, and their method of arrangement was also very attractive. In the collection of Messrs. E. W. KING AND CO., prominent positions were given to Britannia, the largest double standard variety yet introduced, and of delightful, pink shading: Pimpernel, of gorgeous colour; Patriot, 2 LO, and New Giant Mauve. They also set up delightful stands of Austin Frederick, Charity, Comrade, Coralline, Gloriosa, Lord Lascelles, Mrs. Tom Jones, Constance Hinton, and other beautiful varieties.

The Gold Medal collection of Messrs. IRELAND AND HITCHCOCK was chiefly composed of generous pillars and bowls of magnificent blooms arranged with sturdy sprays of their own foliage. The leading sorts were Purple Prince, Orion, Delice, and Diana, a most charming pink with rosy veins. A silver-gilt medal was awarded to Mr. J. STEVENSON, whose group included lovely spikes of

Charity, Charming, Crimson Glow, Diana, Guinea Gold, Hebe, La France, Splendour, Warrior, and other varieties of his raising. Silver Medals were awarded to Messrs. DANIELS BROS. and to Mr. A. BLANDFORD for delightful arrangements of Sweet Peas.

AMATEURS' CLASSES.

The Daily Mail Cup, offered for twelve vases, distinct, of varieties in commerce, was won by F. W. FRANKS, Esq. (gr. Mr. W. Humphrey), Loampits, Tonbridge, with a magnificent collection of such sorts as Picture, Royal Purple, Pimpernel, Powerscourt and Hebe. Major-General R. L. MULLENS, C.B. (gr. Mr. T. Baines), Langham Oaks, Colchester, was a very good second in this strong class and Dr. G. COLE, The Old Manor House, Beeston, was third.

The New Sutton Cup was won by Sir RANDOLF BAKER, Bart. (gr. Mr. A. E. Usher), Ranston, Blanford, who won the previous Cup outright last year and has excelled in this class for seven consecutive years. His splendid eighteen vases included Mrs. Arnold Hitchcock, Charming, Hebe, Elegance and Mammoth of very light

quality. Major J. LUBBOCK, (gr. Mr. J. B. Lowe), Croft House, Pangbourne, was second in this important class.

No fewer than thirteen members entered for the Cory Cup, which requires six vases of Sweet Peas. The cup was won by Mrs. V. M. WILLIAMSON (gr. Mr. W. Langsdon), Bramhope, Canterbury, who included excellent vases of Hebe, Royal Scot, Charming and Royal Purple. Mrs. SHIRLEY WOOLMER (gr. Mr. S. Astley), Warfield Priory, Bracknell, was second and LADY ARDEE (gr. Mr. W. Barrett), Kilruddery, Bray, Ireland, was third; while many excellent collections were unsuccessful. There were only two exhibits of twelve vases of British raised varieties, and the first prize was won by Sir RANDOLF BAKER, Bart., who included good vases of Charity, Powerscourt, Hebe and Warrior. Lt.-Col. H. L. SCOTT (gr. Mr. W. Muzzell), Hawthorn Lodge, Bracknell, was a good second. Of the five exhibits of three vases of specified colours the best was shown by Mrs. V. M. WILLIAMSON.

The Monro Challenge Trophy Class which is open to competition among the trade only was responsible for five excellent exhibits. Messrs. THOS. CULLEN AND SONS won the trophy with a dozen fine vases which included Pink Perfection, Purple Perfection, Champagne, Crusader, and Mermaid. Messrs. E. W. KING AND Co. were second, and Mr. H. J. DAMERUM was third in this interesting class.

The following classes are open to all members. The President's Class, for three vases illustrating colour schemes, induced a large competition, and the first prize was won by Miss RUSSELL (gr. Mr. C. H. Rundle), Barton Court, Canterbury, with particularly successful combinations of excellent spikes. Mr. F. W. FRANKS was second.

The blooms in the Seedling Classes were the object of much interest. Messrs. E. W. KING AND Co., won both first prizes and their brilliant vases of 2 L.O. were magnificent. Centaur and Torchbearer, in this class were also of great merit. In the class for six varieties raised by the exhibitor, Mr. J. STEVENSON won the first prize, showing 2 L.O., crimson; Ida, pink shade; The Sultan, very dark maroon; Leslie Rundle, cream, and Pimpernel, scarlet. Messrs. THOS. CULLEN AND SONS were second.

Competition was very strong in the E. W. King Cup Class and A. HUTTON, Esq., (gr. Mr. Wm. Scutt), Nutfield Priory, Redhill, was first with twelve magnificent vases which included Royal Scott, Matchless, Wild Rose, Warrior and Grenadier. Sir JOSEPH TICHBORNE, Bart. (gr. Mr. C. Goodchild), Tichborne Park, Arlesford, was second, and Capt. R. BRASSEY, (gr. Mr. J. G. Quinn), Cottesbrook Hall, Northampton, was third in the keenly contested class.

The new Burpee Cup was won by Sir RANDOLF BAKER, Bart., whose splendid six varieties were Miss California, Electra, Ivory Picture, Caroline, Sunshine and Mammoth. Mr. H. D. TRIGWELL, Greenford, was second with another good collection.

The Single Bunch Classes were staged in the annexe and in these Miss RUSSELL was particularly successful. Miss RUSSELL's excellent first prize vases were of Snow Queen (white), Britannia (pink), Austin Frederick (lavender), Leslie Rundle (cream), Charming (cerise), Pimpernel (scarlet), Youth (Picotee), and Royal Purple. Mr. F. W. FRANKS won first prizes with Wizard (orange-scarlet) and King Manoel (maroon), and in both classes Miss RUSSELL won the second prizes. The best vase of blue Sweet Peas was of Mrs. Tom Jones, shown by Mrs. V. M. WILLIAMSON.

Generally the District Classes were exceedingly well contested. In the Western Counties and South Wales Class the first prize was won by ALAN GIBBS, Esq. (gr. Mr. Thos. Reynolds), Tanglewood, Lisvane, Glamorgan, with a good exhibit, and Sir RANDOLF BAKER was second. The chief prize in the Southern Class was won by Mr. F. W. FRANKS with Major C. B. KRABBE (gr. Mr. A. W. Gower) Calcot Grange, Reading, second. The winning six

vases included exceedingly good spikes of Pimpernel, Mrs. C. W. Unwin and Charming. In the Scottish Class the first prize was won by Mr. JOHN M. JEFFREY whose best vases were of Pimpernel, Charming and Doris. The Irish Sweet Peas were also excellent and travelled well. Lady ARDEE won the first prize with particularly good vases of Doris, Cicely, Wild Rose and Elegance. There was no exhibit in the Northern Counties Class, but in the Midland Counties Class the best of nine collections was shown by Capt. R. B. BRASSEY who staged excellent vases of Constance Hinton, Matchless and Majestic Cream.

The Bide Plate was won by W. MARTINEAU, Esq. (gr. Mr. C. Ball), The Chestnuts, Boxmoor. Mr. F. STRETFORD, Apsley, Hemel Hempstead, won the Breamore Challenge Cup and the Hamilton Cup was won by Mr. A. LEIGH, Strongford, Tittensor, Stoke-on-Trent, who had excellent spikes of Mrs. W. J. Unwin, Wizard, Hebe and Matchless. In the *Amateur Gardening* Class the standard of excellence was so high that the judges awarded an extra prize. The cup was won by Mr. SIMON RICHARDS, Wrexham, who was also first in the very large class for Amateurs who grow their Sweet Peas unaided, and he won two first prizes in the Novices Division. Mr. J. RANDALL, Leamington Spa, won the Voss Cup outright, and the Small Growers' Challenge Cup was won by Mr. H. W. LINNINGTON, Chale, Ventnor, Isle of Wight.

FLORAL DECORATIONS.

The fourteen dinner tables decorated with Sweet Peas and arranged across the centre of the Hall made an exceedingly attractive display. In the open class the first prize was won by Mrs. H. A. KING, Bedford, with an artistic table of Wizard and Sweet Pea foliage, and Mrs. A. D. RUFF, Bedford, was second. Mrs. SHIRLEY WOOLMER, was first in the amateurs' class and she arranged an artistic table with the varieties Mrs. Arnold Hitchcock and Mrs. W. J. Unwin. The best basket of Sweet Peas was exhibited by Miss L. FORTESCUE, Roselands, New Milton, and Mrs. SHANE, Luton, had the best bowl of Sweet Peas.

NATIONAL CARNATION AND PICOTEE.

JULY 14.—The Society which takes under its wing the beautiful Border Carnations and the fascinating Picotees seems to have taken on a new lease of life. During the more recent years the annual show has been almost unimportant, but there was a much greater interest taken in this year's show and the exhibits at the Royal Horticultural Hall, Westminster, were more numerous and of better quality than for a long time past. Mr. Ernest G. Lowe, and his assistant Hon. Secretary, were ready and willing to be helpful and they had instituted an excellent arrangement of having at least one member of the Committee "on duty" to assist the exhibitors and to interest the visitors.

Not only were the exhibits of good quality, but there was an increase in the number of exhibitors; the most noteworthy being Mr. JAMES SMITH, an amateur from the North, whose excellent flowers fully justified his incursion into the open classes.

OPEN CLASSES.

The old time favourite Bizarre and Flaked Carnations are losing their popularity with exhibitors, and in the open class Mr. R. MORTON, Woodside Park, was the only exhibitor and he was awarded the first prize for characteristic blooms of George Melville, Tom Lord and Flamingo amongst his half dozen.

The self-coloured Carnations were excellent and in this strong class Mr. J. DOUGLAS was first with six splendid blooms of such varieties as Rhoderic Dhu, Snowdon and Bookham Scarlet. Messrs. LOWE AND GIBSON were second. Mr. DOUGLAS was also first

with white-ground and with yellow-ground Fancies. His best yellow-ground varieties were Flamingo, Mona and Viceroy, while Prospero was a splendid white-ground Fancy.

There were no white-ground Picotees, but Messrs. LOWE AND GIBSON had six yellow-ground varieties, among which Eclipse, light-edged, and Margaret Lemon, heavy-edged, were excellent. The two exhibits of six Clove-scented Carnations were particularly good and the first prize set of Messrs. LOWE AND GIBSON was composed of well-formed and exceedingly fragrant blooms of Scarlet Clove, King of Cloves, Rose Clove, Steerforth, Salmon Clove and Pearl Clove. Mr. DOUGLAS, who was second, had a lovely vase of the White Crystal Clove.

The two above named exhibitors were placed equal first in the class for three varieties of Fancy Carnations, other than white or yellow ground. Messrs. LOWE AND GIBSON showed especially good vases of Verdun, Myrtle Pettigrew and Sam Griffiths.

In what may be termed the colour classes which require seven blooms each of specified colours, the Cartwright Challenge Cup was won by Mr. JAMES DOUGLAS. He won first prize in the classes for pink or rose self, with Benedict; dark red or maroon, with Rhoderic Dhu; red or scarlet, with Bookham Scarlet; yellow ground Picotee, with Eclipse; fancy, with Mrs. F. W. Seymour, and was first with seven blooms of Clove-scented Carnations. Mr. JAMES SMITH, Darvel, was first in the classes for white self, with Albion, and any coloured self not mentioned. Miss SHIFFNER was first in the classes for yellow self, with Bookham Yellow; buff self, with Effie Dean and yellow-ground fancies, with Kelso.

AMATEUR CLASSES.

There were no Bizarres or Flakes in this division, and, showing good blooms of Fair Maiden, light-edged, and Silas Osbaldistone, heavy-edged, Mr. J. FAIRLIE, Acton, was the only exhibitor of white-ground Picotees. The first prize for yellow-ground Picotees was awarded to Miss E. SHIFFNER, Lewes, who had an excellent vase of Santa Claus, heavy-edged. Miss SHIFFNER was also first with one variety yellow self, buff or terracotta self, with Elizabeth Shiffner; red self with Jean Douglas, and pink self with Mrs. R. P. Smith. Mr. J. SMITH won first prize for three fancies, showing excellent blooms of John Stobart and Glenrosa; one white self, with Albion, one dark red self, with Gordon Douglas, and with Grey Douglas in the any other variety class. Mr. E. CHARRINGTON, Limsfield, was first with Sam Griffith in the class for any other fancy. The class for three yellow-ground fancies was excellent and the first prize vases of Mr. F. W. SEYMOUR, Finchley, were of Paladin, Lieut. Shackleton and Skirmisher. Mr. JAS. SMITH was second.

PREMIER BLOOMS.

The Martin Smith Challenge Cup in the above division was won by Miss SHIFFNER while in the third division Mr. H. A. KNAPTON, Orpington, won the Edmund Charrington Cup. The Premier Carnation blooms were: *Selfs*, Snowdon, shown by Mr. J. DOUGLAS. *Fancies*, Viceroy, shown by Messrs. LOWE AND GIBSON. *White Ground Fancies*, Mrs. Seymour, a new variety with rosy flakes, shown by Mr. J. DOUGLAS. *Yellow ground Fancies*, Togo, shown by Mr. H. A. KNAPTON. *Picotees*: *White ground*, Eclipse, shown by Messrs. LOWE AND GIBSON and *Yellow Ground*, Gannymede, shown by Mr. J. SMITH.

CHESTER ROYAL SHOW.

THE horticultural section of the Royal Agricultural Society's show, held at Chester on July 7 and four following days was of a high standard of excellence, and excelled all previous horticultural exhibitions held in connection with the Royal Agricultural Society in many notable instances. The

arrangements were excellent, and Sir Arthur Hazlerigg, the chief steward, and Mr. Peter Blair, not only received the congratulations of the judges, but of many notable persons present.

The exhibits were staged in two large tents, with plenty of space in the gangways, and there was not a square foot of staging vacant. The promptness of placing the prize cards on the various exhibits immediately after judging was most favourably commented upon by the press. The weather was all that could be desired.

In the competitive section, for a group of miscellaneous plants occupying a space of 350 square feet, three exhibits of excellent quality were staged. Messrs. J. CYPHER AND SONS, Cheltenham, won the first prize of £45 offered by the Royal Botanical and Horticultural Society of Manchester with one of their best efforts. Mr. W. A. HOLMES, Chesterfield, and Mr. T. M. PETCH, Great Horton, Bradford, were placed second and third respectively with well-arranged groups.

In the class for a collection of Orchids arranged on a stage 100 feet square, the sum of £12 was offered as first prize and the winners were Messrs. STUART LOW AND CO., Enfield.

The first prize for a collection of Delphiniums arranged on the ground in a space of one hundred and fifty square feet, was won by Messrs. BEES, LTD., Chester, with one of the most noteworthy exhibits of Delphiniums we have ever seen; the second prize was awarded to Messrs. BLACKMORE AND LANGDON, Bath, who also had a very fine exhibit.

The first prize of £30 offered for a group of Begonias in pots, was won by Messrs. BLACKMORE AND LANGDON.

The first prize of £15, offered for a collection of hardy flowering and foliage shrubs in pots, set out in a space of two hundred square feet, was won by Messrs. BEES, LTD., with a fine collection, and they also excelled in the class for a collection of hardy perennial plants and cut blooms, arranged in a space of forty feet by ten feet, for which the first prize of £30 was offered by the Royal Botanic Society of Manchester. This exhibit would have been a perfect one had the stands and staging been better furnished at one end of the group; the second prize of £25 was well won by Messrs. WM. ARTINDALE AND SON, Sheffield. This was also an excellent group, not quite so well finished in front; third, Messrs. GIBSON AND CO., Leeming Bar, Bedale; fourth, Messrs. HARKNESS AND SONS, Bedale, who both had flowers of fine quality, but much overcrowded.

The best representation of a hardy perennial border, consisting entirely of growing plants, thirty feet by ten feet, was shown by Messrs. BEES, LTD., but the general opinion was that many of these plants were very near the border line of forced plants, at least many of them are not yet in flower in the south of England; second, Messrs. WM. ARTINDALE AND SON; third, Messrs. GIBSON AND CO.

The sum of £15 was offered for a collection of cut sprays of Carnations arranged in a space fifteen feet by five feet. Two very fine exhibits were staged, and the prizes were awarded to Mr. C. ENGELMANN, Saffron Walden, and Messrs. STUART LOW AND CO. in this order.

Mr. H. LAKEMAN was the only exhibitor of border Carnations, and was worthily awarded the first prize of £15.

The premier exhibit of a collection of Sweet Peas, arranged in a space twenty feet by five feet, was shown by Messrs. ROBERT BOLTON AND SON, Essex. Messrs. E. W. KING AND CO., Coggeshall, was placed second, and Mr. J. STEVENSON, Wimbourne, third.

There were four magnificent collections of cut Roses, each occupying a space of fifteen feet by five feet. The first prize was won by Messrs. BEES, LTD., with Mr. THOS.

ROBINSON, Nottingham, and Messrs. W. and J. BROWN, Peterborough, second and third respectively.

NON-COMPETITIVE EXHIBITS.

Large Gold Medals were awarded to Messrs. SUTTON AND SONS for a miscellaneous collection of cut flowers and plants arranged across one end of the tent in a most effective manner.

To Messrs. ALLWOOD BROS., for one of their very best displays of Carnations and *Dianthus Allwoodii*, the latter arranged on the grass in a natural and most pleasing manner.

To Messrs. R. BOLTON AND SONS, for Sweet Peas; to Messrs. KENT AND BRYDON, for rockery and alpine plants; to the STUDLEY COLLEGE, Warwickshire for an excellent collection of Peaches, Melons, and other fruits; to Messrs. WATERER, SONS AND CRISP, for a collection of shrubs; and to Messrs. ALEX. DICKSON AND SONS, for Roses, which, amongst other novelties, included *Dame Edith Helen*, a remarkable fine flower of full exhibition size and deep pink colour, and of robust growth; a very beautiful Rose. This Rose was recommended for the Society's Gold Medal as the best new flower in the show.

Gold Medals were awarded to Messrs. JAS. CARTER AND CO., for Sweet Peas and florists' flowers; to Messrs. DOBBIE AND CO., for Sweet Peas; to THE DONARD NURSERY CO., County Down, for Roses, etc.; to Mr. CHARLES H. ELSTON, Sefton Park, for a rock garden; to Messrs. MAURICE PRICHARD AND SONS, for herbaceous and alpine plants in pots; to Messrs. JOHN PEED AND SON, for stove and greenhouse plants; to Messrs. LAXTON BROS., for a representative collection of Strawberries, including many very promising novelties.

Silver-Gilt Medals were awarded to Messrs. B. R. CANT AND SONS for Roses; to Messrs. ALEX. DICKSON AND SONS, for Sweet Peas; to Mr. HENRY ECKFORD, for Sweet Peas; to Mr. JOHN FORBES, for Phloxes, Pentstemons, etc.; to Messrs. TOOGOOD AND SONS, for flowers and vegetables; and to Mr. C. H. TAUDEVIN, for a wall and formal garden.

Silver Medals were awarded to Messrs. AITKEN AND SON, Chester, for *Statice pyramidalis longifolia*; to Messrs. EDWARD WEBB AND SONS, for Sweet Peas; to ALDERSEY COLLEGE, Chester, for an herbaceous border; to Messrs. BOWELL AND SKARRAT, for alpinists, etc.; to Messrs. DANIELS BROS. Ltd. for Roses and herbaceous plants; to Messrs. JARMAN AND CO., for Roses, etc.; to Messrs. JONES BROS., for herbaceous flowers; to Mr. JOHN JONES, Wem, for Scabious, Violas, etc.; to Mr. H. LAKEMAN, for border Carnations, and to Messrs. MAXWELL AND BEALE for alpinists.

Two Gold Medals were offered by The Royal Botanical Society of Manchester for exhibits of special merit, and these were awarded to Messrs. J. CYPHER AND SONS, for their group of miscellaneous plants, and to Messrs. BEES, LTD., for their group of Delphiniums.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held at the Royal Horticultural Hall on Monday, July 13, Mr. T. R. Butler presiding. Four new members were elected. Four members withdrew interest amounting to £9 15s. 6d., and five over the age of seventy years withdrew from their deposit account sums amounting to £44 6s. 4d.; £81 8s. 3d. was passed for payment to the nominee of one deceased member. The sick pay for the month on the ordinary side came to £44 16s., and on the state side to £35 12s.; maternity claims totalled £4. Grants for additional benefits were made to eight members on the state section, which amounted to £35 3s. 1d., and eleven other cases were considered.

Obituary.

E. Charles Buxton.—By the death of Mr. E. Charles Buxton, who passed away on the 11th inst. at the age of 87, the world of horticulture becomes poorer by the loss of one of its staunchest supporters. For the greater part of his long life most of Mr. Buxton's time and energy were devoted to the garden at Coed Derw, Bettws-y-Coed, and these gardens are to-day an eloquent witness to that vital sympathy and singleness of purpose which accompanied their long development, and which instilled them with that wonderful and arresting charm which was never more impressive than in these days of their fully-ripened maturity. Coed Derw has been a Mecca to garden-lovers for many years, and there are few indeed who, whether they had enjoyed Mr. Buxton's personal friendship or become known to him through post and press (for he was a prolific private correspondent and contributor to horticultural journals) have not been the recipients of "E. C. B.'s" unstinted generosity. To nurserymen, no less than to amateurs of all grades, the good things of that richly-furnished home of treasures, old and new, were so freely given that many a garden to-day owes much of its interest to the liberal hand of Coed Derw's kind-hearted owner. The most remarkable plant of many introduced by Mr. E. C. Buxton is the beautiful *Nemophila*-blue form of *Geranium Wallichianum*, which is vastly superior to the type and a variety of the rarest merit and distinction. The lemon-yellow *Anthemis tinctoria* also first appeared as a seedling at Coed Derw, as did that curious little *Aster*, *A. dumosus* nana. The prostrate form of *Cotoneaster horizontalis*, known as *pepusilla*, with horizontal "planes," was, strangely enough, antedated by a more robust but otherwise almost similar form which arose as a seedling in one of Mr. Buxton's borders. The golden-leaved *Thymus serpyllum* also had its origin at Bettws-y-Coed, and that singularly handsome, pure white form of *Lamium orvala* (this year being offered for the first time in a nurseryman's list) is one of the latest of the Coed Derw productions. A very striking form of *Sedum spathulifolium* with crimson rosettes owes its inception to the same source, and many a good old plant—such as *Dianthus Woolly Dod*, *Rhododendron cheiranthifolium* and *Geranium anemonefolium*—might have been lost to cultivation had it not been for the hospitality accorded them in this old domicile of rare and precious things. Mr. E. Charles Buxton was of a type which we can in these days ill spare. He was a naturalist, sportsman, and gardener and always the embodiment of that rare quality which is understood by the phrase "a fine old English gentleman." J.

ANSWERS TO CORRESPONDENTS.

LABURNUM: *Newcastle.* The Laburnum, *L. vulgare*, is a deciduous tree. A tree possesses an evident trunk, whereas in shrubs the bole is wanting or so restricted that it is not a stem in the accepted sense of the word.

NAMES OF PLANTS: *L. S. A.* 1, *Epilobium hirsutum*; 2, *Ballota nigra*; 3, *Lythrum Salicaria*; 4, *Sedum album*. *H. P.* *Kalmia latifolia*. This plant is propagated by seeds, or by layering. Cuttings are very difficult to strike, and plants obtained in this manner are rarely satisfactory afterwards. *H. A.* 1, *Rubus ulmifolius* var. *inermis*; 2, *R. thyrsoides*; 3 and 4, too small to identify; 5, *Molopospermum cicutarium*. *H. M.* *Ulmus montana*.

Communications Received.—G. B.—A. A. H.—H. E.—G. M.—C. H. (Thanks for 2s. 6d. for R.G.O.F. Box).—E. W.—J. L.—R. B. T.—E. G. J.—C. G.—H. C.—A. O. W.—F. D. C.—H. G. G.—W. J. (Thanks for 2s. for R.G.O.F. Box).

MARKETS.

COVENT GARDEN, Tuesday, July 21st, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

s. d. s. d.	Hydrangea	s. d. s. d.
Adiantum	—Pink, 48's per	
cuneatum	doz. ...	18 0-24 0
per doz. ...	—Blue, 48's per	
—elegans ...	doz. ...	30 0-48 0
—Aralia Sieboldii ...	Marguerites, white,	
9 0-10 0	48's per doz. ...	15 0-18 0
Araucarias, per	Mignonette, 48's	
doz. ...	per doz. ...	15 0-18 0
Asparagus plu-	Nephrolepis in	
mosus ...	variety ...	12 0-18 0
—Sprengeri ...	—32's ...	24 0-36 0
12 0-18 0	Palms, Kentia ...	30 0-48 0
Aspidistra, green	—60's ...	15 0-18 0
36 0-60 0	Pteris, in variety	
Asplenium, per	10 0-15 0	
doz. ...	—large 60's ...	5 0-6 0
—32's ...	—small ...	4 0-5 0
24 0-30 0	—72's per tray	
—midus ...	of 15's ...	2 6-3 0
12 0-15 0	Verbena, 48's	
Cacti, per tray,	per doz. ...	12 0-15 0
—12's, 15's ...	Viscaria, 48's	
5 0-7 0	per doz. ...	15 0-18 0
Crassulac, 48's per		
doz. ...		
24 0-30 0		
Crotons, per doz.		
30 0-45 0		
Cyrtomium ...		
10 0-25 0		
Hydrangea		
White, 48's per		
doz. ...		
18 0-30 0		

Cut Flowers, etc.: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Achillea, per doz.	Lapagerias, per
bun. ...	doz. blooms ...
6 0-8 0	3 6-4 0
Adiantum deco-	Lavender, per doz.
rum, doz. bun.	bun. ...
9 0-10 0	9 0-15 0
—cuneatum, per	Lilium longiflorum
doz. bun. ...	long, per doz. ...
6 0-8 0	2 6-3 0
Alströméria, per	—speciosum ...
doz. bun. ...	album, long, per
6 0-8 0	doz. ...
Asparagus plu-	—short, per doz. ...
mosus, per bun.	3 6-4 0
long trails, 6's	—speciosum
med. sprays ...	rubrum, long,
1 6-2 6	per doz. blooms
—short ...	4 0-5 0
0 9-1 3	—short " "
—Sprengeri, per bun.	3 0-5 0
long sprays ...	Lily-of-the-Valley,
1 6-2 0	per doz. bun. ...
—med. " ...	24 0-30 0
1 0-1 6	Orchids, per doz.
—short " ...	—Cattleyas ...
0 4-1 0	24 0-36 0
Asters, white, per	—Cypripediums
doz. bun. ...	5 0-7 0
6 0-9 0	Roses, per doz.
Carnations, per	blooms, Rich-
doz. blooms ...	mond ...
1 0-2 6	1 6-2 6
Chrysanthemum	—Liberty ...
maximum, doz.	1 6-2 6
bun. ...	—Madame Butter-
4 0-5 0	fly ...
Coreopsis, per doz.	1 6-2 6
bun. ...	—Mme. A. bel
1 3-1 6	Chatenay ...
Cornflower, per	1 6-2 6
doz. bun. ...	Melody ...
2 0-2 6	1 6-2 0
Croton leaves	—Molly Sharnan
per doz. ...	Crawford ...
0 9-2 6	2 0-2 6
Delphiniums, var-	—Ophelia ...
ious, per doz.	2 0-2 6
spikes ...	—Sunburst ...
2 0-3 0	2 0-3 0
Echinopsis, per	Scabiosa caucas-
doz. bun. ...	ica, per doz.
6 0-8 0	bun. ...
Eryngium, per	4 0-5 0
doz. bun. ...	Smilax, per doz.
8 0-10 0	traile ...
Fern, French, per	3 0-3 6
doz. bun. ...	Statice, mauve ...
0 9-1 0	6 0-12 0
Gaillardia, per	—yellow, per doz.
doz. bun. ...	bun. ...
3 6-4 0	6 0-9 0
Gardenias, per	—white, per doz.
box, 12's, 18's	bun. ...
6 0-12 0	6 0-9 0
Gladioli, white,	—pink, per doz.
per doz. bun. ...	bun. ...
12 0-15 0	6 0-9 0
—primulinus, per	—Suworowii, per
doz. spikes ...	doz. bun. ...
2 6-3 0	8 0-12 0
—Halley, per doz.	—latifolia, per
spikes ...	doz. bun. ...
3 0-4 0	10 0-12 0
—Prince of Wales,	—incana, per doz.
per doz. spikes	bun. ...
4 0-5 0	9 0-12 0
—scarlet, per doz.	Stephanotis, per
spikes ...	72 pips ...
5 0-6 0	2 6-3 0
—cream, per doz.	Stock, English
spikes ...	white ...
5 0-6 0	8 0-10 0
—Giant White,	Sultan, white, per
per doz. spikes	doz. bun. ...
4 0-5 0	4 0-6 0
Gypsophila panic-	—mauve, per doz.
ulata, per doz.	bun. ...
bun. ...	4 0-6 0
10 0-15 0	—yellow, per doz.
Heather, white,	bun. ...
per doz. bun. ...	5 0-6 0
9 0-12 0	Sweet Peas, per
—pink, per doz.	doz. bun. ...
bun. ...	4 0-9 0
8 0-9 0	Violas, per doz. bun.
	1 0-1 6

REMARKS.—Trade continues rather slow in this department. Most of the stands are well filled with out-door blooms which are difficult to clear each day. Statice

sinuata is arriving in large quantities, consisting of white, mauve, pink and yellow varieties. White Asters are also easier in price owing to the increased supplies; a few coloured blooms are on sale but very moderate in quality. Double white Stock continues to meet a good demand. Sweet Peas at present are beyond requirements and large quantities have been arriving during the past week in a very unsatisfactory condition, owing to the hot weather. Gypsophylla paniculata is now arriving in much better condition and taking the place of G. elegans. Echinopsis and Eryngium meet a good demand for decorative purposes. Gladioli of the giant-flowered varieties are again arriving in good condition and a good selection is offered. Small consignments of Gladioli are now coming from Holland, including The Bride (white). Carnations at present exceed the demand and prices fluctuate according to quality. Roses are arriving in a full-blown condition and prices vary according to their quality. Lilium longiflorum has been selling more freely during the past week; larger supplies of L. speciosum album and L. s. rubrum are on offer, also a few L. auratum. A few bunches of bronze Chrysanthemums have been on offer during the past week, but do not attract much attention, owing to the shortness of stems and the abundant supplies of the flowers mentioned above.

Fruit: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Apples—	Grapes—
English, 1-bushel	—Muscat ...
—Early Victoria ...	3 0-7 6
2 0-4 0	—Canon Hall ...
—Grenadier ...	4 0-10 0
2 0-4 0	Grape Fruit,
—Beauty of Bath ...	—Cuban ...
4 0-6 0	40 0-42 6
New Zealand, per	—Jamaica ...
case ...	40 0-42 6
—Sturmer ...	—Florida, finest ...
17 0-18 0	45 0-55 0
—Others ...	—South African,
16 0-18 0	per case ...
Tasmanian, per	35 0-38 0
case ...	Lemons, Messina,
—Sturmer ...	per box ...
14 0-16 0	12 0-15 0
—Others ...	—Murcia ...
13 0-16 0	11 0-20 0
Apricots, Spanish	—Naples ...
—1-sieve ...	20 0-30 0
10 0-14 0	Melons (Forced)
Bananas ...	basket ...
15 0-25 0	12 0-20 0
Cherries, white,	—Cantaloupes ...
—English ...	5 0-12 6
5 0-12 0	Nectarines, per
—black, English ...	doz. ...
8 0-15 0	9 0-24 0
—Napoleon ...	Oranges, Jaffa ...
12 0-16 0	16 0-18 0
Cherry Plums, per	—Spanish—per case
box ...	—30's ...
12 0-14 0	25 0-35 0
Currents, Black,	—30's ...
English per lb. ...	25 0-35 0
0 7-0 7 1/2	—50's ...
—Red, 1-sieve ...	20 0-30 0
5 0-8 0	—South African,
Gages, Spanish	per case ...
—1-sieve ...	22 0 26 0
5 6-16 0	Peaches, English
Gooseberries,	per doz. ...
cooking berries	9 0-24 0
per 1-sieve ...	Pines ...
3 0-4 0	5 0-8 0
—dessert berries,	—South African,
per lb. ...	box ...
0 3-1 3	6 0-7 0
Grapes—	Plums, Spanish,
—Alicante, per lb. ...	—1-sieve ...
1 6-2 0	6 0-10 0
—Belgian ...	—French, crate ...
1 6-2 0	7 0-14 0
—English ...	Raspberries—
1 6-3 0	—dessert, per lb. ...
Hamburg, lb. ...	1 0-1 6
	3 lb. chips ...
	1 6-2 3

Vegetables: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Beans—	Marrows, doz. ...
—Evesham, flat ...	1 6-2 6
7 6-10 0	Onions—
—Scarlet Runner,	—English, per cwt. ...
1 sieve ...	12 6-14 0
6 0-7 0	—Spring, per doz. ...
Beets, new, per	6 0-7 0
doz. bun. ...	Parsnips, per cwt. ...
3 0-4 0	6 0-8 0
Broad Beans, per	Peas, Yorkshire,
bushel ...	per bag ...
6 0-8 0	12 0-14 0
Cabbage, per tally	Potatoes—
10 0-15 0	—English, per
Cauliflowers, per	bushel ...
doz. ...	3 0-4 0
2 0-4 0	—Canary Island,
Carrots, new, per	case ...
doz. bun. ...	6 0-10 6
4 0-5 0	Rhubarb, per doz. ...
Cucumbers, per doz.	6 0-7 0
5 0-6 0	Spinach "New
—Flats, 36's, 42's	Zealand," per
8 0-16 0	lb. ...
Dutch Onions ...	— 0 6
11 0-12 0	Tomatoes, English,
Endive, per doz.	per strike—
2 6-3 0	—Pink ...
Greens, best, per	4 6-5 0
bag ...	—Pink & White ...
4 0-5 0	5 0-5 6
Horseradish, per	—White ...
bundle ...	4 0-4 6
2 0-2 6	—Blue ...
Lettuce, Cos, doz.	4 0-4 6
1 0-3 0	—Canary, per case
—Cabbage Let-	16 0-21 0
tuce ...	—Guernsey ...
1 3-2 0	5 0
Mushrooms, cups	Turnips, new, per
2 0-3 0	doz. bun. ...
—Broilers ...	5 0-10 0
1 3-2 0	

REMARKS.—The general demand has been good, but certain sections report a slackening of prices, probably due to increased arrivals. Choice fruits, such as Peaches, Nectarines, Melons and Grapes continue in good request. Raspberries for dessert are a better trade, supplies having fallen off somewhat. Some English Apples such as Grenadier, Rev. W. Wilks and Early Victoria have sold well, where they have been of fair size, but small Apples are selling only at a very low figure. Cherries have been plentiful and prices have shown some variation, but really first class fruit has sold well. Dessert Gooseberries have sold moderately well, but cooking sorts have not been wanted. Gage Plums and Apricots from Spain have sold well, but prices for Gages have not been very high. Plums have also arrived from France and Italy. Tomatoes have arrived on a large scale; supplies from Holland are such that they have seriously affected the price level of home-grown produce. Cucumbers are a steady trade.

GLASGOW.

REMARKS.—The cut flower market was in a dull and uninteresting condition during the past week, the attention of trade buyers being chiefly devoted to soft fruits. Prices were depressed and only prevented from slumping by reason of the reduced supplies. Carnations were abnormally cheap, being only worth 8d. and 9d. per dozen on Tuesday, but the average for the week ranged from 1/- to 1/6. Sweet Peas fluctuated between 10d. and 6d. per bunch, and specials made 8d. and 9d. Gladioli were a good selling line, Prince of Wales, Halley, and salmon realising 1/6 to 2/- for 6's, Peach Blossom and Blushing Bride, 6d. and 8d., and The Bride, 6d. Ophelia, Madame Abel Chatenay and Golden Ophelia Roses were steady at prices which varied from 2/- to 3/6 per dozen, while small Richmonds and Mrs. H. Stevens sold from 1/- to 2/-. Marguerites averaged 3d. to 6d. per bunch, and medium stuff sold so low as 1/- per dozen bunches. Gypsophylla was worth from 2d. to 6d.

In the fruit market Strawberries monopolised attention, and a large business was done at prices varying from 8d. to 1/4 per lb. English Black Currants were plentiful and made 10d. per lb.; Raspberries averaged 1/-; Red Currants 8d.; Gooseberries (red), 4d. (white) 3d.; Peaches, 6/- to 12/- per doz.; Melons, 3/- to 4/6 each; Pines, 2/6 to 4/-; Gages, 11/- to 14/-; Apricots, 10/- to 12/- per case. Napoleon Cherries brought 21/-, black 18/-, and ordinary 14/-, and Grape Fruit were firm at 38/- to 42/- per case, according to counts.

Vegetable prices were influenced by the holidays and Tomatoes cheapened as the result of the large consignments. Scotch went back to 7d. and 10d., English 7d. and 8d., and Guernsey 7d. Lettuces remain unchanged at 1/6 to 2/6 per doz., Cauliflowers 3/- to 5/-, Mint 2/- to 4/-, and Scotch Cucumbers 4/- to 9/-, while Dutch were worth from 2/- to 3/-.

GARDENING APPOINTMENT.

Mr. E. Houghton, for the past three years Foreman at Moulton Paddocks, Newmarket, as Gardener to Sir PIERCE LACY, Bart., Ampton Hall, Bury St. Edmunds, Suffolk. (Thanks for R.G.O.F. box.—EDS.)

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THE Gardeners' Chronicle

No. 2014.—SATURDAY, AUGUST 1, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.2°.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday July 29 10 a.m. Bar. 30, temp. 60° Weather, Overcast.

THE proper method of pruning Roses is a fertile and perennial source of friendly controversy between rival rosarians. There are, for example, known to us two neighbouring Rose growers who, when spring comes round, meet, as regularly as the cuckoos or the aphides come, to discuss this grave matter on the terrain of one of them. The visitor who belongs to the "hard and late" school shakes his head wisely and with affected sorrow when he sees that his misguided neighbour—a partisan of the "early and light" school—has already cut back with hesitating hand the growths on the hybrid Roses of his garden. He prophesies darkly that no good will come of this and returns to his own garden to wait a much later date before starting on his own pruning operations. But so surely as June arrives he receives from his friendly rival a bunch of Roses of excellent form and colour with an inquiry whether his Roses are yet ready to cut. This is indeed an unkindly cut, for as the sender knows full well, the "late and hard" man's Roses are only just beginning to recover from their long-deferred "down to the ground" pruning. Although, however, in the first round in the encounter the disciple of late pruning must cry *touché*,

the victory is not yet. In late autumn, somewhat near Christmas time, he parries the thrust by presenting a bunch of his latest blooms, with the inquiry, "How do your Roses grow?" And so the controversy, like that of the Bigendians and Littleendians, goes on year after year, and needless to state the protagonists become more and more persuaded as the years go by that their several and divergent methods of pruning are right. This year, however, seems to have shown that the practitioners of the late and hard method have certain advantages over those who engage in the less drastic form of Rose surgery. The swift summer which came hot on the heels of a wet winter led to conditions which, so far as our observation has gone, made the results of late and hard pruning prevail conspicuously over those obtained by adepts of the rival school. Where light and early pruning has been practised the Roses bloomed as they perhaps had never bloomed before, but even the best of the blossoms were fragile things, with hanging heads and bleached petals; for garden Roses do not always enjoy a surfeit of sunshine. In contrast with the evanescence of the Roses on lightly-pruned bushes and standards, those borne on plants treated by the more drastic method were shapely, upstanding, and of good texture. Whether this is a general experience it would be interesting to learn, but it certainly is the case in the several Rose gardens which it has been our lot to observe. Nothing is more futile than to base a general conclusion on occasional observations, and therefore it must suffice to record the facts and leave those who grow Roses to consider them in the light of their own experience. Variety, soil, aspect, and shelter are, of course, factors which have to be taken into account. Nevertheless, there is another, and in our opinion, important controversy which must be considered, and that is the effect of time and extent of pruning on Black Spot disease. So far as our experience goes, hard and late pruning acts as a definite check on the ravages of this disease. It goes without saying that this mode of pruning does no more than tend to keep the disease within bounds, and that for even this to be accomplished all prunings must be collected and removed from the Rose garden. If, in addition to these precautions, the ground of the Rose garden is turned over thoroughly in late autumn and turned over lightly again in the spring, when the spring mulch is applied, the disease—though it remains—is prevented from doing the worst of which it is capable. A good rosarian of our acquaintance follows this routine and also sprays his Roses when he does his fruit; in the autumn or winter with lime sulphur—taking care to cover the ground as well as the bushes with spray; and with lime sulphur and lead arsenate of weak strength when the leaves are about to appear. His only other routine is to spray on two successive evenings when aphid first makes its appearance, using on this occasion one of the many excellent proprietary spray fluids. The life history of the Black Spot fungus precludes the hope that even by these methods the disease may be expelled from a garden, but a little Black Spot, if it is not allowed to leaven the whole lump, does no great harm in the garden. It is sometimes advised to remove the top soil, and that practice may be a good one; but it would seem likely that the soil-turning process which we have described is no less efficient, for by it the mycelium of the fungus growing on old leaves and twigs is likely

to be buried, and so kept from doing harm. Bordeaux mixture is also recommended as a means of reducing the ravages of the disease, and is certainly effective if applied before spring growth begins. Most important of all, however, is to keep the Rose garden where Black Spot is endemic free from all plants other than Roses. By so doing the ground may be stirred frequently and cultivated when necessary. The health of the Roses is enhanced, and healthy plants have, whatever may be said to the contrary, an active power of offering resistance to disease.

Ken Wood.—The London County Council has made a regulation under which children are not allowed to enter Ken Wood, the new open space at Hampstead, unless accompanied by adults. In reply to complaints made against this restriction the L.C.C. authorities state that bitter experience elsewhere has compelled them to enforce it for the preservation of the wild flowers, Bracken and trees at Ken Wood.

National Sweet Pea Society.—The takings at the turnstile of the Royal Horticultural Society's Hall last week at the Annual Show of the National Sweet Pea Society, amounted to £15 14s. on the first day, and £9 1s. on the second day. These amounts cannot be taken as any indication of the total attendance, because in addition to the members of the Society, all Fellows of the R.H.S. are also admitted free. Throughout the first day of the show Mrs. Robert Bolton and Mrs. Cecil Bartlett were so busily engaged in selling the Sweet Peas which were given by many members that they realised £21 15s. 6d., so that the total proceedings of the show amounted to £46 10s. 6d. We were pleased to note at the show the increased interest which was shown in the Affiliated Society's Shield which was presented to the Society by Mr. W. J. Unwin three years ago. Last year there were four entries while on this occasion six societies sent exhibits of twelve vases of distinct varieties grown by their members and all were of considerable merit. The winning society proved to be the Pangbourne Horticultural Society (Hon. Sec. Mr. E. W. Dix), whose collection included splendid vases of Wembley, Mammoth, Mrs. Arnold Hitchcock, Valentine and Jean Ireland. The Eastbourne Society, which won the Shield in 1923, were second, while the Wincheap District Society, last year's winners, came third.

Botanical Magazine.—Part 4 of Vol. CL. contains illustrations and descriptions of the following twelve plants:—*Arisema elephas*, t. 9058, an Aroid with a solitary, tri-sect leaf, and producing a very striking inflorescence with a maroon-purple spathe, striped with white or cream colour, and a long spike, in both sexes, for the plant is dioecious; *Rhododendron Oldhamii*, t. 9059, an old species in cultivation, and described by Dr. Masters in *Gard. Chron.*, April 22, 1882, p. 524. It has also been known as *Azalea Oldhamii* and as *Rhododendron longiperulatum*. Originally introduced into this country by Messrs. James Veitch and Sons, and exhibited by them in 1882, it was afterwards lost and then re-introduced by Mr. E. H. Wilson in 1918. The beautiful red colour and prolonged flowering make it a desirable plant for gardens, but it has not been ascertained whether it is suitable for outdoor cultivation, and even in Cornwall, where it has been grown out-of-doors, it has not done well so far. *Syringa Potaninii*, t. 9060, is one of the late Mr. Reginald Farrer's introductions from Southern Kansu, where, he states, it forms a very graceful shrub, and although Farrer described the panicles of small flowers as insignificant, specimens cultivated by Major F. Stern, near Goring-on-Sea, proved attractive. The plant is perfectly hardy in this country and

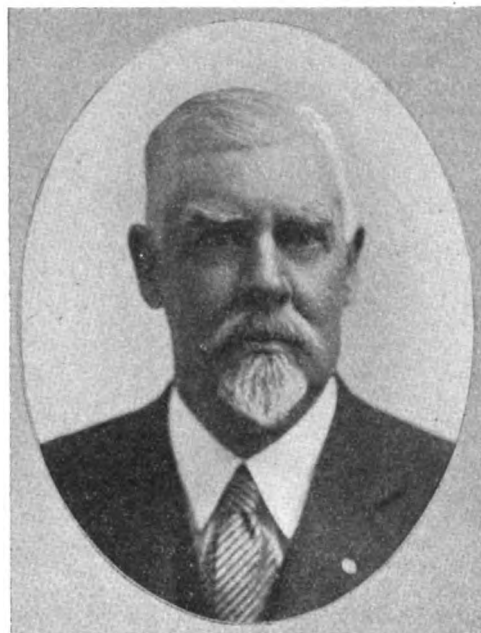
flowers very late. The corolla is white, sometimes flushed with pink. *Prostanthera rotundifolia*, t. 9061, a strikingly pretty plant, with bright, violet flowers, has been cultivated in gardens for a number of years. A description of it was given in *Gard. Chron.*, April 1, 1848, p. 223. It is cultivated at Kew as a greenhouse plant, but will probably succeed in the warmer parts of the country out of doors. *Prunus yedoensis*, t. 9062, is described by Mr. E. H. Wilson as the most beautiful of all the Japanese Cherries, and is the one generally planted in the parks, temple grounds, cemeteries, and streets of Tokyo. The blossoms when first opened are pure rose, and finally become pure white. It forms a tree up to 16-m. high. *Viburnum grandiflorum*, t. 9063, is one of the most attractive of the Viburnums by reason of its pretty inflorescences of white flowers tinged with pink and its delightful fragrance. In the Marquis of Headford's garden at Kells, co. Meath, this Viburnum blooms in January, but at Kew it did not flower this year until early March. *Primula Edgeworthii*, t. 9064, is the plant known to gardeners as P. Winteri, which was the name given it by the late Mr. William Watson, in *Gard. Chron.*, March 4, 1911, p. 130. It was subsequently found that it was not a new species, for dried specimens of the plant had existed in herbaria for one-hundred years. This Primula was found in 1908, by Mr. E. L. Winter, growing by the edge of the snow in a ravine in the neighbourhood of Paini Tal; in its natural habitat the flowers come a much richer blue than in this country. *Maxillaria lepidota*, t. 9065, was described by Reichenbach, in *Gard. Chron.*, February 9, 1878, p. 168. The plant was discovered by Hartweg in southern Colombia about 1842. The flowers are yellow, with brownish-red, flexuose tails, and of the characteristic Maxillaria shape. *Fritillaria oranensis*, t. 9066, was described and illustrated in *Gard. Chron.*, March 13, 1880, p. 340, fig. 62, but before that it was described by Mr. F. G. Baker, in *Gard. Chron.*, January 13, 1877, p. 45, under its synonym F. Mumbyi. It is a very pretty plant with nodding flowers, the segments being dark purple, with a green, median band and yellowish tips. The foliage is narrow and slightly glaucous. *Smilax excelsa*, t. 9067, is a hardy climber of very vigorous growth, flowering and fruiting abundantly at Kew every year. The leaves are broadly ovate and almost truncate at the base, and the stem is more or less thorny. The clusters of red berries are very pretty. *Chionodoxa Siehei*, t. 9068, is a good garden plant, and is said to be the largest and most brilliant of all the Chionodoxas. It is perfectly hardy, and flowers about the middle of March. *Arctotis Roodae*, t. 9069, is named after Mrs. Rood, of Van Rhynsdorp, south of Namaqualand. The flower heads are very conspicuous, the ray-flowers being reddish-orange or almost blood red, with a black blotch at the base forming a ring. Although the species would probably be useful for summer bedding, the plant is not sufficiently hardy to survive our winters. Unfortunately, this pretty plant is somewhat difficult to propagate, as none of the specimens grown in this country has produced seeds, and cuttings root very slowly and uncertainly.

Sandy Show.—By kind permission of Mrs. Graves, the Sandy Flower Show will be held in the spacious park of Sandye Place, Sandy, Bedfordshire, on Thursday, August 27. This will be the fifty-second exhibition held by the Society, and in addition to a large display of flowers, it will include industrial exhibits, small live stock and dairy produce. The bands of the Irish Guards and the Life Guards have been engaged for the event.

French Plum Crop.—The Ministry of Agriculture is informed that the probable yield of "Blue Plums" in the department of Lot-

et-Garonne, France, this season is estimated to be slightly below half that of the record harvest of 1923, when 125,000 packages, averaging ten kilogrammes each, were exported to England.

Mr. Arthur Herrington.—Formerly well-known in the metropolitan district, Mr. Arthur Herrington has now returned to this country on a holiday visit after spending many years and acquiring considerable success and fame in America. He commenced his horticultural career under his father at Betteshanger Rectory at Sandwich, in Kent, and later, spent a couple of years in Lord Northbourne's garden at Betteshanger Park. His next appointment was at the Royal Horticultural Society's old Gardens at Chiswick, where he remained for about four years, passing thence to Gravetye under Mr. William Robinson, whom he also served on the staff of *The Garden*. From 1890 to 1893 Mr. Herrington carried out extensive alterations in Lord de Saumarez's garden at



MR. ARTHUR HERRINGTON.

Shrubland Park, working to plans made by Mr. William Robinson. On the completion of this work he returned to the staff of *The Garden*, but in December, 1895, he sailed for America and early in the following year took charge of Mr. H. McT. Twombly's estate at Madison, New Jersey. Here he laid out the famous Madison Gardens and continued to manage them until the death of the owner in 1910, when he resigned the superintendence of the Twombly estate and commenced business as a landscape gardener, but still remained in residence at Madison. Since then Mr. Herrington has carried out a great deal of landscape work and has been very closely concerned with the development of the Garden Club of America. He has lectured on garden subjects to most of the garden clubs in and around New York, Philadelphia, Boston, Pittsburg and Cleveland. For the past ten years he has also been manager of the International Flower Show and still holds that position. This exhibition, as our readers may remember, is the leading horticultural show in the United States and is held each year in March under the joint auspices of the New York Horticultural Society and the New York Florists' Club. Notwithstanding all his other activities Mr. Herrington continues his literary work and is the author of *The Chrysanthemum*, which is an extremely popular work in America. He is also a regular contributor to *The Garden Magazine* and

Country Life. During his holiday he is visiting numerous notable gardens in some of which he was employed during his earlier years and on July 16th, remembering his old association with Chiswick, he visited the R.H.S. Gardens at Wisley and gave an address to the students on "Horticultural Prospects in America." Mr. Herrington has certainly made good in America, and fortunately enjoys better health than when he resided on the outskirts of London.

Guildford Gardeners' visit to Pyrford Court.—At the invitation of Viscount Elvedon about sixty members of the Guildford and District Gardeners' Association, accompanied by the President, Alderman W. T. Patrick, visited the very extensive gardens at Pyrford Court. Mr. W. Auton, the gardener, whose name is well known to our readers, conducted the party round the gardens and pleasure grounds which cover about fifty acres, a great deal of which had been brought into cultivation under Mr. Auton's supervision within the last fifteen years. The gardens surround the fine modern mansion, which stand upon an eminence overlooking an extensive dell and commanding views across the Wey valley on to the distant Surrey hills between Guildford and Dorking. Earlier in the year the woodland dell is resplendent with Daffodils, but it is now naturally adorned with Heather, Ivy, and Bracken. Beyond the dell the ruins of Newark Abbey stand out prominently, and a walk through delightful paths and meadow tracks brought the party to an artificial lake bordered by what is probably the finest collection of Japanese Irises in the country. Over fifty varieties are represented by thousands of plants, many of them seedlings of remarkable beauty. Viscount Elvedon experiments in growing different kinds of cattle food and has acres covered with plants for this purpose. The gardener's house is lit by gas collected from fermenting material in a retort not far away. The President expressed the thanks of the visitors to Viscount Elvedon for a most enjoyable afternoon.

National Diploma in Horticulture.—The Royal Horticultural Society's Diploma in Horticulture has been awarded to the following as a result of the written and Practical Examinations for the Diploma held this season: **Section 1. General Horticulture.**—Miss G. L. Hebditch, c/o Standard Bank of South Africa, Northumberland Avenue; John T. Peers, Clayton Manor Lodge, Clayton-le-Dale; W. B. Pymont, Rodway Hill, Cannington, Bridgwater; Miss R. S. Collett, Royal Botanic Garden, Edinburgh; Miss K. Lloyd Jones, Clyn-Corrig, Mumbles, S. Wales; Miss A. Hodgkinson, Royal Holloway College, Englefield Green; Percy Clare, 62, Lindum Avenue, Lincoln; Miss R. Leir, Charlton, Goodrich, Ross-on-Wye; Alexander Turner, Courtown Gardens, Gorey, Co. Wexford; Miss H. Broadbent, University College, Reading; and Andrew M. Cumming, Streatham Hall Farm, Exeter. **Section 2. Hardy Fruit Growing.**—George H. Nash, 27, Broadway, Hawksworth Wood, Kirkstall; and William H. Barker, 45, St. George's Road, Wimbledon, S.W. **Section 4. Seed Growing, Testing, &c.**—Alan D. Blaxill, 12, Bedford Close, Bedford, Feltham, Middx. **Section 8. Horticultural Teaching.**—Miss V. G. Hartley, Hockerill College, Bishops Stortford; George H. Nash, 27, Broadway, Hawksworth Wood, Kirkstall; and William H. Barker, 45, St. George's Road, Wimbledon, S.W. The two last-named candidates qualified also in **Section 2**. The following have also passed the Preliminary Examination and will be eligible to take the Final Examination when they have completed the necessary six years of practical experience in gardening:—Robert H. Jeffers, 23, Bell Place, Edinburgh; Miss A. Copeland, 19, Dundonald Road, Kelvinside, Glasgow; Miss F. Record, 70, Old Chester Road, Rock Ferry, Birkenhead; Miss B. M. Hitching, Shirley, Mostyn Avenue, Craig-y-don, Llandudno; Thomas F. Reilly, Rehins,

Ballino, Co. Mayo, Ireland; George L. Sowter, 20, Lavender Row, Darley Abbey, Derby; A. E. Gunningham, Council Fruit Plot, Gulval, Penzance; Geoffrey E. Hindley, R.H.S. Cottages, Wisley, Surrey; William McCarrell, Deanston House Gardens, Doune, Perthshire; Miss G. Richards, Ravensworth Castle School, Co. Durham; Miss S. Johnson Bird, Lowther College, Bodelwyddan, Rhuddlan; Wm. M. Campbell, University Gardens, Edgbaston, Birmingham; Miss E. Horrell, The Grange, Thorney, Peterborough; C. H. Walkden, 26, Biggin Avenue, Mitcham, Surrey; and Miss Vera F. P. Day, 58, Ashburton Road, East Croydon, Surrey.

Dr. B. Daydon Jackson.—It has been suggested that the approach of his eightieth birthday is a suitable opportunity for an appreciation of the services to the Linnean Society of its general secretary, Dr. Benjamin Daydon Jackson. Dr. Jackson has served the Linnean Society for forty-five years—as botanical secretary from 1880 to 1902, and as general secretary from 1902 until the present time. His devotion to the work and interests of the society are well-known. Dr. Jackson has also achieved a wide reputation as the exponent of the library and collections of Linneus, of which the Linnean Society is the custodian; and workers at home and abroad gratefully acknowledge his assistance in matters connected with Linneus and his work. His bibliographical work, including the early volumes of the *Index Kewensis*, is a permanent monument of his industry and powers of research. It is proposed to ask Dr. Jackson to allow his portrait to be painted, and hung in the rooms of the Linnean Society. A committee of present and former officers has been formed to carry out the proposal. Sir David Prain has kindly consented to act as treasurer. Subscriptions (which should not exceed two guineas) from Fellows and other friends should be sent to Mr. J. Ramsbottom at the British Museum (Natural History), Cromwell Road, London, S.W. 7.

Belgian Horticultural Conference.—The Belgian Federation of Horticultural Societies is holding its annual Congress at Borgervout on the 12th and 13th September next. The Minister of Agriculture, M. le Baron Ruzette, has granted his patronage to the Congress.

Rose Trials at Bagatelle.—The judging of the Roses assembled for trial at Bagatelle, in the Bois de Boulogne, Paris, took place this year on the morning of June 15. The judges, with M. Deville, a municipal councillor as President, included nationals of many different countries, those from England being Mr. C. Turner, of Slough, and Mr. W. Wallace, of Eaton Bray, with Mr. Alex. Dickson, Newtownards, from Ireland. There were about fifty varieties submitted; among the French Roses, the Gold Medal was awarded to the variety *Ville de Paris*, a *Pernetiana* Rose raised by the celebrated firm of Pernet-Ducher, of Lyons. The flower is large and full, round and cup-shaped in form, with broad petals, slightly indented at the top, the colour sunny-yellow, lightly tinged with orange and a little deeper at the base. The bud is large and ovoid, the stem long and firm; the foliage is abundant, and of a deep bronzy green. The variety is said to be very resistant to cold, and does not deteriorate in colour under strong sunlight. A Gold Medal was also awarded to the variety *Gooland Beauty* (Sunburst $\times$ Goldem Emblem), a hybrid Tea Rose raised by the Dutch grower Van Rossem. The petals are not numerous; in colour they are yellow at the base, otherwise yellowish-pink, broad, recurved, and indented at the edge. The foliage is glossy, and the habit is floriferous. A First-class Certificate went to the variety *Madame Henri Gravereaux* (Mrs. Aaron Ward $\times$ an unnamed seedling), a hybrid Tea from MM. Barbier et Cie, of Orleans. This is a very fine variety, the bud ovoid in shape, yellow, shaded with red;

the centre of the recurved petals, when open, are reddish salmon, while the exterior is straw-yellow. The foliage is glossy and the thorns small and a little curved. Certificates were awarded to the three following varieties; Mrs. James Heath, a hybrid Tea raised by Messrs. Samuel McGredy and Son; Maud Cuming, also a hybrid Tea, from Messrs. Alex. Dickson and Sons; and Climbing Mme. Herriot, a sport from the variety Mme. Herriot, sent by Messrs. Ketten, of Luxembourg. Other Roses of note were Madame Ed. Raynal, a hybrid Tea, from M. Joseph Sauvageot, a pinkish white flower with a nicely shaped bud; and Madame André Saint, a hybrid Perpetual raised by MM. Barbier et Cie, with a beautifully scented, white flower and fine foliage. The number of Roses sent this year, to be submitted for award next June is forty-six, contributed by twenty-five raisers.

Market Bosworth Horticultural Society's exhibition; Nottingham and Notts. Chrysanthemum Society's meeting. Friday, August 7.—Killearn Flower Show. Saturday, August 8.—Auchencrow Flower Show; Coupar-Angus Flower Show; Dysart Flower Show.

"Gardeners' Chronicle" Seventy-Five Years Ago.—Visitors to the Horticultural Society's Shows.—A correspondent having expressed his regret that the number of visitors should have been so small at the late July exhibition of the Horticultural Society, and the same notion having been entertained by others frequenting these London meetings, it seems worth while to show what foundation there is for such ideas. The truth is easily ascertained by the examination of official statements; for the Horticultural Society has never felt it expedient to make a mystery of a matter in which the public is as much



FIG. 33.—ECHIUM CALLITHYRSUM AT TRESCO ABBEY.

(see page 87).

Appointments for the Ensuing Week.

Sunday, August 2.—Wakefield and North of England Tulip Society's meeting. Monday, August 3.—Walsall Horticultural Society's show (2 days); Bishop's Stortford Horticultural Society's show; Rutland Horticultural Society's show; Keynsham and District Horticultural Society's show (2 days); Whitley, Monkseaton and Cullercoats Horticultural Society's show; Pershore Flower Show. Tuesday, August 4.—Leicester Abbey Park Flower Show (2 days); Royal Caledonian Horticultural Society's meeting. Wednesday, August 5.—Northampton Horticultural Society's show (2 days); Scottish National Sweet Pea, Rose and Carnation Society's show (2 days); Royal Welsh Agricultural Society's show (3 days); Royal Horticultural Society of Ireland's exhibition (3 days); Royal Agricultural Society's Council meeting; National Viola and Pansy Society's meeting. Thursday, August 6.—

interested as anybody. The following shows the numbers present in July ever since the first establishment of the exhibitions, in the year 1833: 1833, 1,200; 1834, 3,076; 1835, 5,612; 1836, 6,088; 1837, 6,463; 1838, 6,546; 1839, 5,781; 1840, 5,072; 1841, 7,194; 1842, 3,500; 1843, 7,568; 1844, 4,062; 1845, 5,963; 1846, 6,083; 1847, 6,827; 1848, 14,084; 1849, 7,338; and 1850, 7970. So that, in reality, the July meeting this year was the largest ever known, with the exception of 1848, when the enormous number of 14,084 persons attended, in consequence of the previous June meeting having been such a day of pouring rain, that only 870 persons, instead of 10,000, passed the gates. That great exhibition did not therefore, at the most, represent beyond 5,000 visitors for July. Let us hope that this short statement of facts may serve to show how dangerous, in figures, it is to trust to fancies.—*Gard. Chron.* August, 3, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Cattleya.—Such Cattleyas as *C. labiata*, *C. Bowringiana*, *C. Gaskelliana*, and the many hybrids that make new growth during the summer months and flower in the autumn, are making considerable progress. It is advisable at this period to keep them elevated well up to the roof-glass in order to consolidate their growths. Water should be afforded liberally, but as the pseudo-bulbs are near maturity and the flowers commence to push through the sheaths, the supply should be considerably reduced, for if the plants are overwatered at this stage it frequently causes the pseudo-bulbs to decay. Care should also be taken that water is not allowed to accumulate between the outer skin and the pseudo-bulb of *C. Bowringiana*, and such hybrids from it as *C. Portia*, *C. Wendlandii*, and others of this class.

C. Mendelii and C. Mossiae.—Plants of these species, and many of their numerous hybrids, have now passed out of flower, and should be kept slightly on the dry side in order to afford them a short period of rest, but so soon as fresh root action is observed any necessary repotting should be attended to.

Laelia.—The Mexican *Laelias*, *L. anceps*, *L. albida*, and *L. autumnalis*, are now in full growth. During bright, sunny weather they should be syringed overhead at least twice each day and otherwise plentifully supplied with water at the roots. Allow them to enjoy all the sunlight possible, short of scorching the leaves. They will be benefited by having the shading removed early in the afternoon, at the same time closing the ventilators of the house so as to induce the temperature to rise for a few hours, but opening them again slightly late in the evening when the weather is favourable, so that all superfluous moisture may be dispelled.

Laelia pumila.—This cool-growing *Laelia* is now making new growth, and as young shoots develop from the base they should be re-potted or have fresh materials applied to the surface. When re-potting, only a thin layer of compost should be used, which should be sweet and porous, as during their growing season the plants require liberal supplies of water. Shallow Orchid pans, without side holes, with wire handles attached for suspending, are suitable receptacles. For a short time after re-potting water should be sprinkled over the surface only, but the supply may be increased as the plants become re-established in the new compost.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELYDEN,
Pyrford Court, Woking, Surrey.

Liliums.—For decorative value, colour range, fragrance, and gracefulness of habit, few bulbous plants can compare with the Lilies, and the border kinds generally may be said to thrive in any fairly rich, well-drained soil if planted at the right depth and at the correct time. No bulbs deteriorate more quickly than do those of Lilies when left exposed, hence the sooner they are planted after being purchased or after being lifted to permit the renovation of borders, the better. *L. candidum* is one of the most charming of old-fashioned plants, and if existing clumps are doing well, it is not wise to disturb them, but if they show signs of exhaustion or have become overcrowded they should be lifted and re-planted so soon as flowering is finished. *L. croceum*,

the brilliant varieties of *L. elegans*, and the stately *L. giganteum* should also be lifted and re-planted immediately after flowering, that is, when the flowering stem has ripened. None of these is stem-rooting, hence planting should be less deep than is practised with stem-rooting kinds, a covering of from four-inches to six-inches being sufficient, according to the texture of the soil. *L. giganteum* will be found to have offsets of varying sizes at the base of old flowering stems, and these should be graded and planted in groups for flowering the second and following years.

Herbaceous Borders.—Although many of the earlier-flowering plants, such as Delphiniums, Paeonies, and Lupins are over, herbaceous borders generally are about at their best, such plants as Antirrhinums, Alströmers, Chrysanthemums, Eryngiums, Hollyhocks, Gladioli, Kniphofias, Pentstemons, Potentillas, Rudbeckias, Phloxes, and Veronicas, amongst many others, being in full vigour to take their places. Keep the surface clean and hoe thoroughly after watering. Attend to the removal of all faded flowers, so as to prolong the flowering period, and see that late flowering subjects are sufficiently staked and tied.

Violas.—Where these are used for edging beds and borders, it is of the utmost importance that all flowers should be removed as they fade, and that the plants should have abundance of water in dry weather. On dry, sandy soils it is very difficult to maintain the floral display at this season, and plants which have become somewhat exhausted by a long period of flowering may be cut over and allowed to make fresh growths. If well supplied with water, when needed, they will produce abundance of blossoms later in the year. Seedling plants which have recently been planted in nursery rows to grow on for spring bedding should have the hoe plied between them frequently.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Bulbs for forcing.—Preparations should be made for potting bulbs intended for early forcing. Those which will be required to flower by Christmas, or earlier, should be potted during early August. Polyanthus Narcissi of the Paper White and Double Roman types, and Roman Hyacinths, may be flowered in early November, whilst *Die van Thol* Tulips, *Narcissus Golden Spur*, *N. Henry Irving*, and *N. Trumpet Major* may be flowered by Christmas. It is essential, however, that the bulbs should be procured from a reliable source, and success with early forcing cannot be achieved with bulbs which have not been thoroughly ripened. A well-ripened bulb should be quite firm; a medium-sized, firm bulb is to be preferred to a larger one which lacks solidity.

Lachenalias.—These should be potted now. The bulbs should be left undisturbed throughout the ripening period and until it is intended to repot them. To obtain the best results this latter operation should take place before the bulbs have restarted into growth.

Freeseias.—These should be potted early in August, and when this is done flowers may be had by Christmas. The corns are particularly liable to injury and loss of vitality if allowed to start prematurely into growth. Careful consideration should be given in ascertaining the quantities and varieties of bulbs which will be required for flowering next winter and spring, and orders should be placed for them as early as possible, if this has not already been done.

Eucharis grandiflora.—To those who still grow this beautiful old plant, the spell of hot weather which we are experiencing affords a good opportunity to get the plants thoroughly matured. During late summer, when the plants have completed their growth, they may with safety and advantage be removed to a cool pit, shaded only from the brightest weather and then gradually exposed to increased light and sunshine, at the same time decreasing the supply of water at the roots, with a view to getting the bulbs thoroughly ripened. This treatment should tend to increase the production of flowers during the coming winter.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM.
Wormley Bury, Broxbourne, Herts.

Peaches and Nectarines.—So soon as the successional trees of Peaches and Nectarines have finished their crops, cut out the old fruiting growths, except where required for the extension of the trees. It is an easy matter to discover which branches and new growths are required to furnish the trellis with good wood and to form a well-balanced and shapely tree. These should be trained into position, and all the sun and air possible be admitted at all times now; in fact, if the lights can be removed from the house so much the better. Still continue to syringe the trees morning and evening to keep red spider in check. Where the trees have made rank growths, and these have been allowed to grow and develop, they are much better removed entirely, as they are useless for fruit production. See that the main branches have room to swell and do not suffer from being tied too tightly. Old, established trees that have carried heavy crops will greatly benefit from weak, liquid manure given at alternate waterings, and one or two applications of artificial manure to assist the buds for next season's crop.

Late Houses and Peach Cases.—Continue to keep the young shoots tied in and the fruits exposed to the light, as previously advised; admit all possible air on bright days. The latest houses should be kept open day and night to retard the crops so much as possible. Should we have a dull spell with occasional bursts of sun I should advise a slight shade, otherwise the foliage and the skins of the fruits will be liable to scorch, especially in the case of Nectarines. Large Peaches, such as *Bellegarde*, *Diamond*, and *Sea Eagle* will require rather more thinning to allow the fruits to fully develop; keep the roots moist at all times.

Trees in Pots.—Continue to feed up and ripen the earliest varieties growing in pots and standing out-of-doors. These require very liberal treatment and constant watching in regard to supplies of water at the roots. Whenever possible, when buying new trees, visit a reliable nursery and make a personal selection, and if the orders are placed early in the season one may be certain of obtaining the varieties required.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Summer Pruning.—This should now progress with all possible speed. Where extension is required in Pears on walls, the leading shoots should be made secure by nailing or tying; this is best done at the present time, before the young growths get too stiff, as they are liable to snap off when left until later in the season. All other growths not required may be pruned back to about four-inches from the base. As the work proceeds, clear away all prunings and burn them, lightly forking the borders and leaving them tidy. The fruits of some of

the earliest varieties, such as Dr. Jules Guyot, Jargonelle, Souvenir du Congrès, and Williams's Bon Chrétien, will be swelling up previous to ripening; where crops are heavy, give copious supplies of liquid manure to the roots, and mulch rather heavily. Espaliers, in the kitchen garden, will need the same attention as regards pruning, but I advise leaving the leads their full length at this time of the year, as this helps to draw the sap evenly all over the trees and prevents the buds from forming growth so quickly after being pruned. Prune cordon Pears in the same way, leaving two or three growths at the top of each for a time; as all drastic pruning tends to check root action at this time of year, it is wise to spread the work over several days.

Pruning Apples.—Espalier and cordon Apples may be treated much in the same way as advised for Pears, but bush Apple trees require a little more attention and care, always having in mind the admission of plenty of light and air among the branches. Keep the fruits exposed so much as possible by removing some of the leaves that may hide them, and by keeping the centre of the bush well open. The leading growths should remain to help to balance the trees.

Bush Plums.—These should be treated in much the same way, as where the fruits are exposed they are of better colour than those shaded by foliage.

Netting.—String netting that has been used for protecting the crops of small fruits should be collected when thoroughly dry and stored if not required for immediate use. Where time can be spared, it is an excellent plan to overhaul the nets and make good the holes before storing them, as it is much easier to do this when the nets are stretched out than when the work has to be done in a confined space.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Onions.—A small sowing of Onions may now be made, leaving the main batch for another fortnight. The seeds should be sown in drills drawn about fifteen inches apart. The batch of resulting seedlings should make good growth before cold weather comes along. In the early spring these may be planted where they may make good bulbs to provide the early summer supplies. It is a good plan to always sow a few more drills than are required for planting out, as the seedlings will be found most useful to draw from for salads. Good varieties for autumn sowing are White Lisbon, Giant Rocca, and Golden Globe Tripoli, with Autumn Queen to follow on.

Celery.—Examine Celery plants now and remove all side growths and also all leaves badly damaged by slugs or maggots. These should always be cut away before earthing up begins. Constant attention must be paid to the watering of the crop and to dusting the foliage at intervals with soot when the dew is on the leaves.

Peas.—Late rows of Peas must be well mulched and regularly watered. July proved a trying time in which to keep up regular supplies of this crop, and the effect of practically seven weeks drought is now severely felt on shallow ground.

Turnips.—It is not too late to make a good sowing of a quickly maturing variety of Turnip. Ground that becomes vacant after Potatoes may be filled with Turnips, which will furnish nice young roots in the winter. Thoroughly soak the ground beforehand to get it into an easily workable condition, and when this has been done, drills may be drawn fifteen inches apart, thinning the

seedlings out when they are large enough to handle.

Cauliflowers.—Cauliflowers are now turning in fast and beds should be looked over daily for cutting and turning the leaves down to keep the curds a good colour; the sun very soon takes effect on the curds, so this operation should be regularly attended to. Good heads may be kept fresh for several days if the plants are pulled up, placed in a cool shed, and given an occasional damping. Ground for Cauliflowers must always be well-tilled and manured, otherwise the results will never be satisfactory, while in a season like the present they will be very disappointing. To obtain Cauliflowers over so long a period as possible it is desirable to plant on several sites, some of these being more exposed than others.

after which they may be placed in a frame, plunged in ashes, and grown along to the end of April, when they should be gradually hardened off ready for planting out in mid-May.

Celery.—The batches will now require a slight earthing up. Tie up each plant after removing the lowest leaves and suckers; give the trench a thorough soaking of water; liquid farmyard manure may also be given. The soil may then be added, making the mould fine with the spade and working it firmly and evenly round each plant. After each earthing up, leave the surface a little lower than the heart of the plant.

Borecole or Kale.—This hardy and useful vegetable may now be planted out on ground from which Potatoes have just been

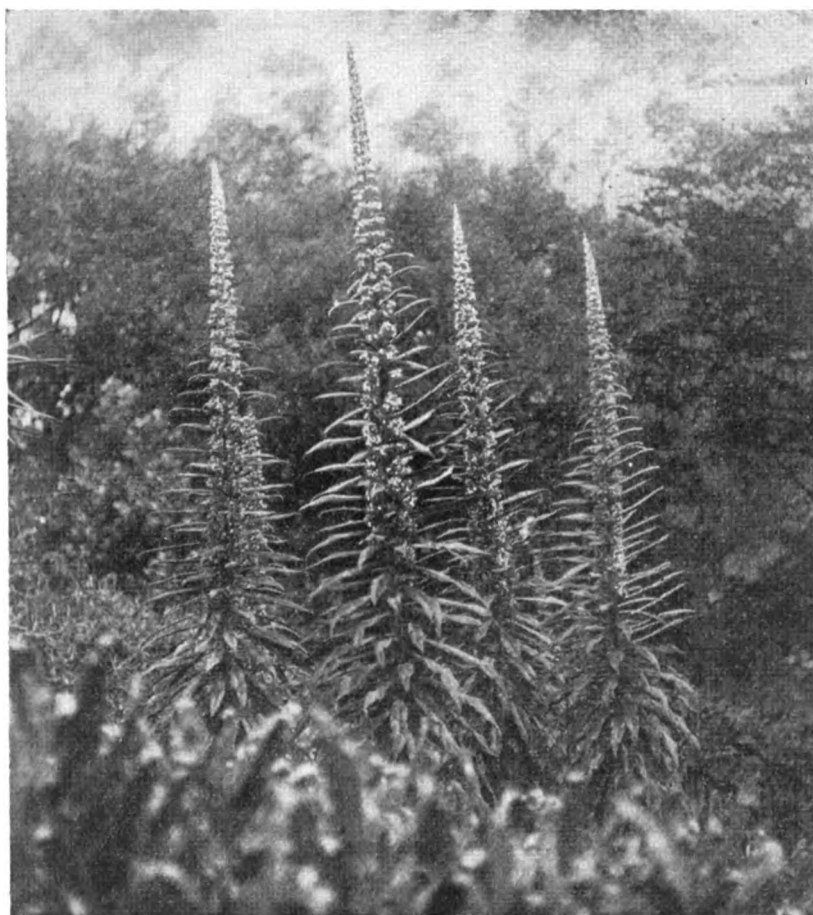


FIG. 34.—ECHIMUM PININANA AT TRESKO ABBEY.

(see p. 87).

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Hollyhocks.—These attractive border plants that we see so few of to-day, owing to disease, are best treated as biennials. Seeds sown during the next few days should result in good, strong plants for flowering next year. The young seedlings may be first pricked out into boxes; later, when sufficiently large, about the end of September, they may be transferred to three-inch pots, and wintered in a cool house or frame. So soon in spring as growth is evident the young plants will require potting into a five-inch or six-inch pots, using good loam, to which plenty of sand and a sprinkling of bone-meal is added. Grow them in a warm greenhouse temperature for about a fortnight,

cleared. If good heads are desired allow plenty of room between the plants and in the rows; they should be given at least two feet apart each way.

Autumn-sown Onions.—The first or second week in August is a very suitable time for sowing this crop in northern gardens, but district and altitude must determine the exact date. It is not advisable to make the ground too rich when preparing it, as a hard, firm growth is needed to withstand the winter. The best situation is one on a border having a slope and an eastern exposure. Suitable hardy Onions for autumn sowing are the brown and white Tripoli varieties; these, if brought safely through the winter, will, when replanted, grow to a large size. Giant Zittau is also a very fine Onion for autumn sowing.

B

TREES AND SHRUBS.

LATE BROOMS.

SOME little time ago reference was made in these columns to the late-flowering form of *Cytisus scoparius* brought out by Mr. T. Smith, of Newry. Several groups of this Broom have been established for some years in the more open parts of our woodland garden, and they have always proved a great acquisition. Though the date of flowering may vary somewhat according to the season, the shrubs are, as a rule, at their best from the middle of July to well into August, which means that they will provide masses of their fine, rich yellow at a season when few shrubs are in flower.

Though I cannot suggest an explanation, we have found this strain of *Cytisus scoparius* much more vigorous than the type. Often attaining a stature of eight-feet, the stout, upright stems throw out a wealth of elegant, unusually leafy branches, which droop in a most graceful manner, especially when laden with their copious yield of exceptionally large blossoms. By always raising seed from the latest to flower we find little indication of any reversion to type in these handsome Brooms.

PHILESIA BUXIFOLIA.

THIS interesting shrub, belonging to the Lily order, was introduced from Chile in 1847 and from Valdivia in 1853, but it is still an uncommon subject in gardens generally. There is, however, no reason why it should not be more widely known, for it is hardy and by no means difficult in a lime-free soil. In the late Mr. E. C. Buxton's garden there is nearly a couple of square yards of *P. buxifolia* growing on the shady side of a dense bush of Yew, the bed consisting of peat. Rooted suckers taken from this plant in spring, when growth is active, have invariably done well, especially when accommodated with a cool, naturally moist soil liberally intermixed with peat and leaf mould.

P. buxifolia may be described as an evergreen shrub up to about one-foot high, the erect stems being furnished with long and narrow, deep green, glossy leaves with glaucous underparts and reflexed margins. The flowers, which so closely resemble those of *Lapageria*, to which this shrub is allied, are tubular, a rich, rosy crimson in colour, and of a heavy, waxy texture. They appear in succession throughout the later summer months, but being for the most part concealed beneath the foliage they are not so effective as they might be. This, however, can be overcome when it is possible to select a site which is level with the eye and yet sufficiently moist.

Some years ago a hybrid was raised between *P. buxifolia* and *Lapageria rosea*, this being known by the name of *Philageria Veitchii*. A. T. J.

CORIARIA TERMINALIS.

THIS sub-shrubby plant was introduced from Sikkim in 1897, though discovered many years earlier. It puts up in spring, from a woody base, arching wands a yard or more in length with opposite, egg-shaped leaves of a pale green. These terminate in spikes of blossom some eight inches in length, the two sexes being borne on separate racemes. Though the blossoms are not particularly attractive, those of the female sex are conspicuous during the later summer when the petals, instead of falling, become fleshy and swollen and so form a sort of arillus which envelops the seed. This seed-coat may be a bright, translucent amber yellow, or black, according to the varieties, of which there are several, and as they remain on the plant for some months, a well-grown specimen always arrests attention.

C. terminalis is not hardy everywhere but it will withstand as much frost as a Scotch Fuchsia, and in districts where there is any risk of its being injured it is easy to protect the base after the annual growths have died down. A free soil and open situation is what it appears to enjoy, and it is a plant that looks well placed fairly high up on the bolder parts of the rock garden, where it may have ample room to display its elegant branches to full advantage. J.

HARDY JASMINES.

Jasminum nudiflorum is cherished as one of the very finest of garden plants, but there are many other species of this notable genus, which, while not comparing too favourably perhaps with this prime old favourite, are of considerable garden value.

Jasminum floridum—of which *J. subulatum* is sometimes given as a varietal form—was introduced from Japan and China in 1884; the lax panicles or cymes of yellow flowers, individually about half-an-inch in diameter, are by no means unattractive and the plant is well worth a place in any garden. *J. humile* is a deciduous species introduced from India so long ago as 1656; the yellow flowers are produced on terminal peduncles, twin or three-flowered. This species reaches a height of from three to four feet, and flowers during the summer months.

According to the *Kew Hand List*, *J. revolutum* and *J. Wallichianum*, two well-known plants, are varietal forms of *J. humile*, but for horticultural purposes, they are distinct; the bright yellow flowers of *J. revolutum* are very fragrant and produced during the summer. It is a hardy, evergreen, climbing shrub of vigorous growth and its foliage is most attractive. Its one failing is that the quantity of flowers produced is too insignificant when compared with the masses of growth and leafage, but it is very pretty.

J. officinale, the "Jessamine," comes from Persia and north-west India, and its pure white, fragrant flowers are beloved by all. It is a very old plant and has figured in English gardens from the year 1548. A deservedly popular hardy climber, it possesses golden-leaved, silver-edged leaved, and double-flowered varieties, but they compare badly with the type plant. *J. ochroleucum*, a variety of *J. officinale* is perhaps best described as a gross form of the latter; it produces more growth, larger foliage, larger flowers, and these latter are creamy white, wherein they differ from the purity of the better plant.

J. fruticans is a shrub reaching a height of from two to twelve feet. It was introduced in 1570 from the Mediterranean region and is not well known, although it is worth growing for its evergreen, simple leaves and its yellow flowers that are produced in summer. A variety of this species is known as *J. heterophyllum*.

J. primulinum, a recent and glorious introduction from Yunnan, is unfortunately not quite hardy everywhere in England, but in Gloucestershire I know a few plants, favourably placed, which have withstood many and severe winters; it is a fine Jasmine, its large yellow flowers and beautiful foliage being very attractive.

Of *J. nudiflorum* it is superfluous to write, but we should never let its familiarity breed contempt, for in it Fortune undoubtedly collected and introduced one of the very best of all garden plants and to him we owe a deep debt of gratitude.

There are other hardy Jasmines but rarely grown, such as *J. odoratissimum*, a very fragrant climbing-flowered plant from Madeira, and perhaps *J. affine*, possibly a form of *J. officinale*, should be mentioned; the latter differs from the type in a more copious inflorescence and in larger individual flowers. *Ralph E. Arnold.*

BULB GARDEN.

COLCHICUMS.

COLCHICUMS are amongst the most effective subjects for planting and flowering under deciduous trees as they make the garden cheerful during the dull autumn months, their batches of large Crocus-like flowers succeeding one another.

Those who desire such a display should at once prepare for planting as this is best accomplished from the end of July to early September. Colchicums prefer a light, sandy loam, deeply trenched, fairly moist, and enriched with thoroughly decomposed manure. In a medium of this kind they will establish themselves and flower well for several years. Whether grown in clumps of three or six or more, or in irregular lines, the bulbs should be planted from three to four inches deep. So accommodating are the Colchicums they may be planted in the grassy outskirts of shrubberies or tree plantations where they will flower regularly each year.

Colchicum autumnale is the Meadow Saffron, with purplish rose flowers; the variety *C. a. plenum* has large purple double flowers; *C. a. album*, pure white Crocus-like flowers; and *C. a. album plenum*, still rare, has pure white double flowers; *C. Bornmülleri* has large, clear rosy-lilac flowers with a white central base which is conspicuous when the blooms are fully open. *C. byzantinum* is remarkably free and produces goblet-shaped flowers of a soft rosy-mauve shade. *C. Parkinsonii* has medium-sized flowers, rose, purple, and white, prettily chequered. *C. Sibthorpii* is a giant among Colchicums, its rose-shaped, purple flowers, being finely chequered. *C. speciosum rubrum* is undoubtedly one of the most handsome of Colchicums and has the largest flowers of the genus, these being a deep rosy-purple colour; *C. speciosum album*, of equal merit, produces big snow-white flowers.

The smaller-flowered kinds more suited for the rockery include *C. Decaisnei*, which has soft flesh-coloured flowers, and *C. montanum*, with blooms ranging in colour from rose to bluish-white. *W. Logan.*

THE DALMATIAN MARTAGON LILY.

THE Dalmatian Martagon Lily is a very fine plant which is distinct in its appearance from the usual forms of *L. Martagon*, with the exception of that called *Cattanae*, or *Catanae*, which Mr. Grove appears to be of opinion is a form of dalmaticum. Mr. Grove is inclined to consider *L. M. dalmaticum* so distinct as to be a separate species. It is a noble Lily, much taller than the ordinary Martagon Lily, and sometimes grows up to eight feet in height. In dry soils, where it is dwarfed, it is still much taller than *L. Martagon* and a clump presents a handsome appearance. In its habit it closely resembles *L. Martagon*, having the same whorled leaves and long racemes of recurved flowers. There is a notable distinction in the wooliness of the buds. The flowers, of which there are sometimes thirty on a raceme, are of a deep wine colour, and exceedingly pleasing with their shining surface. It has been called the "Black Martagon," but the colour is as stated above and much more attractive than a black flower would be. The *Catanae* one, *L. Cattanae*, or *Catanae*, is much lighter and, according to some authorities has black spots. It is not nearly so handsome as the Dalmatian form.

There is no difficulty in growing this fine Lily in the garden, but I have an impression that it likes a drier and warmer position than where we generally find *L. Martagon* do best. A point referred to by Mr. Grove is worthy of note. This is that *L. Martagon* should be planted early, "as soon, in fact, as the seed is ripe." I plant the bulbs about six inches deep. *S. Arnott.*

INDOOR PLANTS.

STROBILANTHES.

THE supplementary illustration in *The Gardeners' Chronicle* of January 20, 1912, shows *Strobilanthes* flowering as profusely in India as Buttercups in an English meadow.

Within the last few years the value of *Strobilanthes isophyllus* as a winter flowering subject for decorating the warm greenhouse has been increasingly recognised. Apart from the showy, pale lavender, tubular flowers, its blue-tinged, metallic foliage is distinctly ornamental. *S. isophyllus* grows from one foot to two feet high, and forms a symmetrical, much-branched plant, clothed with narrow, glabrous foliage. It is not exacting in its cultural requirements, thriving and flowering most satisfactorily when restricted at the roots.

S. Dyerianus is a more robust-growing species, requiring a stronger compost and more root room. The young shoots from cut back plants root quickly when inserted in a close case over a strong bottom heat. We strike the cuttings singly in long thumb-pots, and at the subsequent potting place three plants in a five-inch pot. The next and final potting is into receptacles seven inches in diameter. The young plants are pinched twice during the season of growth. Plants intended for growing on a second season are potted on singly into five-inch pots; at the beginning of the second year they are potted into seven inch pots. The upper surface of the young foliage of *S. Dyerianus*, is an intense rosy purple on a deep green ground. To retain the rich colouring a slight shade should be afforded during periods of bright sunshine. *Fred W. Jeffery, Glasgow.*

ECHIUMS AT TRESCO ABBEY.

Of the many interesting plants successfully grown in the famous Treco Abbey Gardens, Isles of Scilly, none are more prominent, or more certain to inspire admiration, than the *Echiums*. Our own Viper's Bugloss is no mean ornament to the landscape, where it occurs, but, imagine this to be increased in size from its modest three feet spike to fifteen feet, with a circumference at the base of twenty inches, and you have some idea of the magnificence of certain Canary Island species as grown at Treco. The flowers are bright blue in colour like our own *Echium vulgare*.

The shrubby *E. callithyrsus* (Fig. 33, p. 83) is a very good decorative subject, although its comparatively short, flowering season, and the short spikes of flowers it bears, render it less likely to attract attention. As a parent, as I shall later show, it is of considerable importance. It grows into a shapely shrub eight feet in height.

E. Pininana (Fig. 34, p. 85) is a biennial, although it often takes longer than two years to flower. It flowers once only, and produces a single flower spike. It lasts in flower all the summer, the spike becoming more lax as the season advances and often reaching a height of fourteen feet.

The third plant is a (Fig. 35) hybrid, supposedly between *E. callithyrsus* and *E. Pininana*. Its habit of growth is intermediate, being perennial and it bears more than one spike. The spikes are also more dense than in *E. Pininana*. It is an important advance on both parents, giving the noble spike of the one combined with the perennial growth of the other. The height of a good spike is twelve feet.

A fourth plant is probably also a hybrid. It has the single spike habit of *E. Pininana* but is more dense in habit, and has a reddish tinge in the flowers, probably caused

by a cross with *E. Wildpretii*, a reddish-flowered *Echium*. It reaches ten feet in height.

All the *Echiums* are presumed to hybridise freely, and even some shrubs of *E. callithyrsus* vary considerably in the colour of their flowers, suggesting hybridisation.

The genus has found a congenial home in the Scilly Isles, and the luxuriance of their growth cannot be excelled in the Canaries. Our gardens miss much by being deprived of these glorious plants, but even in the County of Cornwall they succeed only indifferently well, and they do not thrive there so well as in the Isles of Scilly. *E. Brown, Hillside, Doddington, Kent.*

forms, shows a very near approach to a pale hue of that colour, and a well-grown and freely-flowered specimen is a most delightful object. Like all other species of *Orchids*, the flowers of different plants vary in size and shape, and also in the quality of their colour; no two are alike.

Having just passed out of bloom, plants of *D. Victoria Reginae* will have commenced to grow from the base of the last made pseudo-bulb, and when this growth commences to push forth roots is the best possible time for re-potting. This species grows from sixteen inches to twenty inches in height, and thrives in a clean, open material such as A.I. fibre, and live *Sphagnum*-moss in



FIG. 35.—ECHIUM HYBRIDUM (*E. PININANA* × *E. WILDPRETI* ?)
AT TRESCO ABBEY.

ORCHID NOTES AND GLEANINGS.

DENDROBIUM VICTORIA REGINAE.

ALL Orchids having any pretensions of blue colouring are very much in demand. *Dendrobium Victoria Reginae* is one of these, and a plant of this species, shown at a recent meeting of the Royal Horticultural Society, was greatly admired.

Although not a new plant, it is by no means plentiful in Orchid collections at the present day. As in the case of numerous other Orchids, when first introduced, many plants were lost because they were placed in excessive heat, where they gradually dwindled and died.

Although we have no true blue-flowering Orchids—certain fine forms of *Vanda caerulea* excepted—this species, especially in its best

equal parts cut up finely. Not being a robust grower, small, shallow pans are suitable receptacles. It should be potted moderately firmly, as the roots are of a small, wiry nature, and not too energetic; therefore, an excess of potting material should be avoided.

The best place for this blue *Dendrobium* is the warmest end of the *Odontoglossum* house, where the shade and humidity meet its requirements. It should be suspended from the roof. If placed in a dry position, red spider and thrips may attack its leaves. Water should be applied carefully until the plants fill their pans with roots; afterwards they may receive more generous supplies until the new pseudo-bulbs are completed, when a much-reduced supply will suffice. Nevertheless, they must not be dried off to the same extent as other species of *Dendrobium*.

ERICA EXTINCTORIA.

USUALLY as a welcome little stranger appearing on the crown or roots of a larger epiphytal Orchid coming from Burma or Moulmein, this little gem has occasionally appeared in gardens. Those who placed the small tufts in a suitably small pan or Orchid basket, with a shallow supply of Orchid peat and fine crocks around them, have found they soon establish themselves and give, in their season, a profusion of white or blush flowers with a rose-purple blotch at the base of the lip. As with most Orchids of small stature, suspending them near the glass of the roof is essential.

Eria extinctoria (Fig. 36) was first named *Dendrobium extinctoria*, by Lindley, but referred to *Eria* by the late Prof. Oliver (*Bot. Mag.*, t. 5910). In its densely clustered and netted pseudo-bulbs it is allied to *E. reticulata*, illustrated in *The Gardeners' Chronicle* of May 4, 1895, p. 553, and with others of the section has been referred to the allied genus *Porpax*, Lindley. All these tiny, tufted species occupy an interesting position. Their substance is so frail and the atmospheric conditions they endure are so variable that they become semi-parasitic, their fine roots insinuating themselves wherever assistance to tide over long, dry seasons can be attained from the moisture in their more robust host, whether this be a rock or tree.

DENDROBIUM INFUNDIBULUM AND
D. JAMESIANUM.

Two species of *Dendrobium* which succeed under cool-house treatment, but are not grown to the same extent as formerly, are *D. infundibulum* and *D. Jamesianum*. These produce their beautiful white flowers during the summer season. There was a time when plants of these species could be procured at a very modest outlay, and now we are once more receiving imported Orchids in small quantities we may hope for a re-introduction of these delightful species.

Many of our best Orchids may be procured at a very small outlay, and grown quite satisfactorily with other plants. No hybrids, as far as I am aware, have ever been raised from the species named; probably because there are few others which flower at this season. J. T. B.

HARDY FLOWER BORDER.

GILLENIA TRIFOLIATA.

FOR moist ground, either in full sun or in the part shade of woodland trees, the subject of this note is a very delightful plant. It is a North American herbaceous perennial, allied to the *Spiraeas*, to which it bears some resemblance in the three-lobed, apple-green leaves, reddish stems, and erect and graceful habit. *G. trifoliata* attains the height of about two feet or more, and its elegant growths yield, in full summer, loose terminal sprays of pink and white, starry flowers, a succession of which is maintained until autumn. We find this plant an admirable subject for a front position where it has a backing of native Ferns, Goat's-beard *Aruncus*, *Astilbe grandis*, and such like. It has one great virtue, i.e., it does not spread to any extent, and plants in any reasonable good soil will carry on for years without deterioration. There was at one time a "major" form of *G. trifoliata*, as apart from the taller *G. stipulacea*, but one does not hear of this now-a-days. A. T. J.

BIDENS DAHLIOIDES.

ALTHOUGH this Mexican Composite is not hardy everywhere, it will prove permanent enough in a really light, gritty soil in any

of our milder districts, and I believe it is quite satisfactory in the open at Wisley. During the recent drought, this was one of the few plants growing on the edge of a raised and very hot border of poor, stony soil which did not show signs of suffering. Its dark, glossy-green, deeply-cut leaves which look as if they belonged to a subject for much cooler spots, remained fresh and sappy, and early in July each tall flower stem carried its broad-rayed blossom. These blooms suggest those of a *Cosmos*, or small, single *Dahlia*, and the colour in our specimen is white, with the palest wash of pinky Lavender.

It is said, though we have not adopted the practice, that the tuberous root of *B. Dahlioides* may be lifted in autumn and stored like that of a *Dahlia*, care being taken to prevent it drying. J.

SALVIA DICHROA.

HAVING been brought to notice by being made the recipient of an Award of Merit at a recent show in Vincent Square

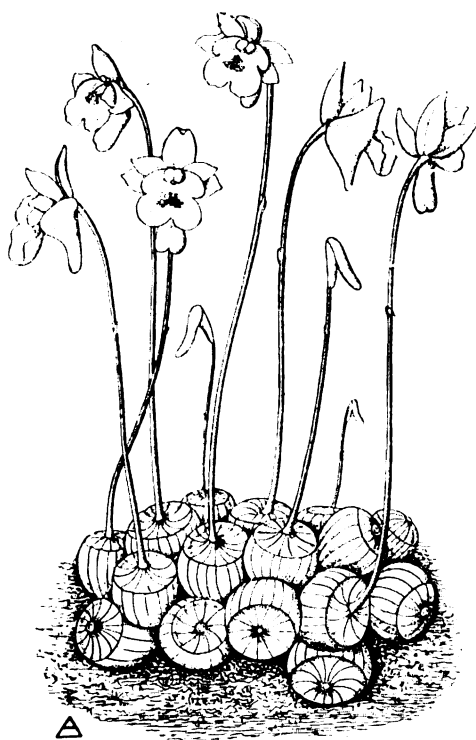


FIG. 36.—ERIA EXTINCTORIA.

when exhibited from the Cambridge Botanic Gardens, this *Salvia* will probably come in for a wider popularity than it has hitherto enjoyed. Although there is an impression among some that it is a biennial, this species is a true perennial and a long-lived, satisfactory subject in any freely-drained, border soil. With us it has withstood 20° of frost, and it does not in the least resent excessive winter wet where the drainage is free. A well-grown specimen will make a large bush up to five-feet or so in height with many erect, flowering stems, which are laden throughout the later summer with long spikes of lavender-blue, white-lipped flowers. The colour of these is apt to be a little disappointing when associated with those of stronger or brighter blues, but they are effective in the mass, especially when accompanied by pale or creamy yellow. *Salvia dichroa* sets seeds in plenty, and these provide the best and easiest means of increase. Though entirely herbaceous in some districts, here in the west this plant retains its bold and glossy, *Verbascum*-like foliage throughout the winter. J.

ANCHUSAS.

ANCHUSAS are not difficult subjects to manage as they grow and flower freely on both heavy and light soils. A deeply-cultivated, moist loam suits them best, and where these conditions obtain very fine plants are produced, which continue to bloom for a considerable period.

The flowers of *Anchusa italica* Dropmore variety are of a fine blue shade that is very conspicuous in the garden. Large beds planted with this variety and carpeted with one of the mauve, or light blue *Violas* are very effective. To maintain a continuance of the same colour throughout the autumn, plants of one of the late blue *Michaelmas* *Asters* may be introduced into the scheme. *Anchusa* growths should be supported by the use of twiggy Hazel branches.

Propagation is not difficult. I have found seeds secured from a reliable source produce plants true to name. Seeds sown on prepared beds during June or July germinate freely, and the seedlings flower the following season. It is a common experience to find seedling *Anchusas* springing up in various parts of the garden—the produce of self-sown seeds. Plants may also be increased by means of root cuttings in the same manner as *Seakale*. Old roots are not entirely dependable, therefore a fresh stock should be raised annually. In the "Blue garden" *Anchusas* form one of the most important groups, and masses of them, with *Salvia patens* in the foreground, have been much admired here. To induce *Anchusas* to produce new flowering growths until late summer the flowering sprays must be removed as the blooms fade, and the roots of the plants should receive copious waterings in dry weather. I have found diluted soot-water beneficial to them throughout the growing season.

There are several varieties of *Anchusa italica*; *Opal* is a good addition to the popular *Dropmore* variety, but names and descriptions of colour forms to meet various tastes may be found in the trade lists of hardy plants. Colin Ruse.

ALPINE GARDEN.

POTENTILLA NEPALENSIS.

FOR continuous blooming throughout the later summer and autumn there are not many plants to equal *P. nepalensis* (*P. formosa*), which, in addition to this extraordinary prolificacy, is a species of the highest merit, the cherry-crimson, jet-eyed, golden-anthered flowers being singularly handsome. It is, moreover, quite hardy, practically drought-proof even in poor, thin soils, and long-lived. Perhaps in these days of rock-gardening one more often sees *P. n.* Miss Willmott, which is a replica of the type in miniature. This is an adorable little plant, everything that could be desired in habit and temperament for rock-garden culture, and it is in many places scarcely out of flower the year round.

The well-known *P. Gibson's Scarlet* is believed to be a hybrid between *P. nepalensis* and some form of *P. argyrophylla* (probably *atro-sanguinea*), and a very gorgeous display does it make when its two-feet stems are bearing their abundant crops of large, intensely-scarlet flowers. This plant, however, is not, with us at any rate, nearly so well able to withstand a dry summer and indifferent soil as the foregoing. It demands more generous treatment, especially in regard to moisture, and no border subject is more worthy of it. *P. Hopwoodiana*, on the other hand, does well here under conditions that suit *P. n.* Miss Willmott. This is another hybrid, but

what its origin is I am unable to say. It is, in any case, a *Potentilla* of the utmost charm, growing much after the fashion of *P. nepalensis* to about eighteen-inches, and bearing throughout the later summer an abundance of very large blooms, which are a bright, cherry red, suffused with salmon-buff. At the base of each petal there is a distinct, vivid crimson blotch from which radiate fine rays of the same colour. That description at any rate, covers the plant grown here for some time as *P. Hopwoodii*. J.

FRANKENIA THYMAEFOLIA.

THIS tiny plant is now very pretty; it delights in dry, light, sandy soil in a sunny position, and it makes an ideal plant for the alpine lawn. The almost prostrate branches are furnished with an abundance of minute, Heath-like leaves; in fact, the whole plant very closely resembles a miniature Heath. The small, round, soft pink flowers are produced from the forks of the branches, and a well-flowered colony is quite a charming feature. A few plants in a pan provide a pretty feature for the alpine house. Propagation is by division or by cuttings.

Frankenias have a considerable range, including the Cape of Good Hope, Australia, St. Helena, and Europe (Britain). *F. laevis* is a pretty, native species. *Ralph E. Arnold*.

LIPPIA REPTANS.

A MEMBER of the order Verbenaceae, this little plant is delightful for planting in the interstices of stone paths or for the rock-garden; the pinkish inflorescences are very like those of a *Lantana*. The creeping stems are furnished with pairs of pale green leaves, from the axils of which the red and white flowers are produced in June and July. This species was introduced from South America in 1847. It is easily propagated from cuttings, and should prove very serviceable for the alpine lawn or for a pan in the alpine house. A colony in a warm, sunny position in the rock-garden is delightful. It is a good plan to maintain a stock in a frame during the winter months, for *L. reptans* is apt to succumb to damp and severe frost. *Ralph E. Arnold*.

LAWNS.

LAND laying fallow, in readiness for the receipt of lawn grass seed, should be kept free from weeds and have its surface broken up to secure a fine tilth. Levels should be tested and all inequalities corrected if a "billiard-table" lawn is desired. At the end of August the seeds may be sown. On light soils an autumn sowing is more successful than a spring sowing, and the atmospheric conditions are generally more favourable for the young plants. Choose a calm day for the operation and secure the even distribution of the seeds by working in two directions, north and south, finishing by sowing over the plot again from east to west. The seeds should be very lightly raked in, covered with a thin layer of fine clean soil, and the whole rolled firmly in two operations, and in different directions.

In some districts birds are very troublesome, and on large areas it is advisable to have a lad on duty to prevent these pests from working destruction after the seeds have been sown. Small lawns may be protected by means of nets, or the use of black thread. Birds will, if allowed, do an almost incredible amount of damage in a short time, not only by eating the seeds, but also by dusting themselves in the surface soil.

A scythe should be used for the first cutting of young grass, and cutting should

commence when the grass is about four inches high. A light rolling should follow cutting if the land is fairly dry. Later, cutting may be done with the light lawn mowers, adjusted so as not to cut too low, until the young grass has become established.

Worms are unsightly and destructive to lawns, and must be destroyed by the use of one of the preparations now offered for this purpose. If possible, use the worm destroyer when rain is falling. It is inadvisable to use a hose on new greensward, as the surface is liable to become broken unless extreme care is taken in moving the hose. Apply a dressing of clean, finely sifted soil during November. If the land is deficient in humus the addition of well rotted stable manure in equal proportions should be mixed with the soil. This top-dressing will both feed and protect the young grass plants. On heavy land a dressing of sea-sand is most beneficial.

During the winter severe frosts may raise the roots of the grass, and when this happens a dry day must be chosen for using the roller to again consolidate the surface. No one should walk on new sward during frost, or when the ground is saturated by rain during the winter. *C. Ruse*.

NOTICES OF BOOKS.

Handbook of Hardy Fruits.*

THE completion of this important work has been keenly awaited ever since the first volume, dealing with Apples and Pears, appeared five years ago. The excellence of the earlier volume is fully maintained in the second and final one, which covers the stone and bush fruits, Grapes, Figs, Nuts, Strawberries, etc. Mr. Bunyard is to be congratulated on the sound and able manner in which he has dealt with a wide and difficult subject. His work worthily fulfils its purpose, to occupy the place formerly held by Dr. Hogg's *Fruit Manual*, which is quite out of date and has been out of print for some time.

The book under notice is of modest proportions, but it represents an enormous amount of study. Within the 258 pages of the final volume no fewer than 668 fruits are described, and with very few exceptions, not more than a dozen, the author has grown and studied all of them at Allington. Only where he could not obtain an old variety, or be sure of the authenticity of a name, has he quoted the original description. The varieties included are therefore all distinct, and, so far as can be ascertained, under their original names. As he remarks, it is easy to make a large collection of descriptions by quoting from other authors, but such works tend to confuse nomenclature rather than clarify it. Nothing short of growing the plants side by side, and comparing their characteristics over a series of years, can clear up doubtful identities.

The descriptions of fruits are mostly brief, but they include all the features that are useful for identification. The leaves, shoots, and flowers are described as well as the fruit itself. The pose of the leaf is considered by the author to be a very valuable aid to recognition and one which has hardly received the attention it demands.

Wherever possible there is a reference to some work in which a coloured plate of the variety may be found. Following each

description the origin of the variety is given, and a general note on the value of the fruit in the author's experience. These notes are very sound and add greatly to the value of the book. Keys are provided to aid in the identification of Cherries, Plums, Peaches, Nectarines and Gooseberries. The chief merit of these is their simplicity; but to the present writer they appear to be rather disappointing.

A great deal of work remains to be done to settle the nomenclature and synonymy of Cherries. For this reason the author has omitted many varieties of which he has notes, and confined himself to seventy-seven varieties which he has actually grown and fruited. It can thus be said that all these varieties are distinct. It is remarked that there seem to be three forms of Early Rivers, one or other of which is apparently often wrongly known as Baumann's May. Governor Wood is regarded as one of the best all-round Cherries for garden purposes, whilst its fine flowers make it worth growing for ornamental purposes. Waterloo is described as one of the most delicious of all Cherries, and Knight's Early Black as one of the finest black varieties. Belle de Chatenay is also excellent of its class, doing well as a standard, though normally grown on walls.

Plums, with one hundred and seven varieties described, form an important section. It is an interesting fact that some of the most useful market varieties owe their origin to chance. The popular Victoria, for instance, was found in a garden at Alderton, Sussex, and later sold to a nurseryman named Denyer, at Brixton, and introduced about 1840. The Bush Plum, largely grown in Kent, was found in a hedge near Sittingbourne in 1836, whilst Blaisdon Red, popular in the Severn Valley, was raised from a stock on which an Apricot had been grafted. The origin of the Pershore Plum has not been discovered.

By the way, Mr. Bunyard considers that the liability of Victoria Plum to silver-leaf disease is due to its brittle wood and heavy cropping habit, a combination which leads to broken branches. Jefferson is described as one of the finest of all Plums for dessert, a reputation which it shares with Coe's Golden Drop, a variety which grows well on an east wall, and can be kept long on the tree and for a month or so in the fruit room. Archduke, a large reddish-blue Plum, ripe in October, deserves greater recognition for its lateness. Blue Rock, which closely follows River's Early Prolific, is worthy of more attention from market growers. Coe's Emperor is also said to be worth wider cultivation.

Denniston's Superb is mentioned as a first-rate Plum of the Greengage style. Amongst the true Greengages, Early Transparent Gage is described as quite the best early variety, whilst a new variety, Orpington Prolific, ripening at the end of October, is an interesting late variety which may prove to be of value. Merryweather is commended as a worthy addition to the Damsons, because it gives fruit of good size without loss of the Damson flavour.

Gooseberries, with one hundred and five varieties described, make another interesting section. Lancer is mentioned as quite the best of the pale green varieties, and perhaps the best one all-round of any colour; its fine flavour, enormous crop, and sustained vigour being remarkable. Cousen's Seedling is considered to be unsurpassed amongst late yellow varieties, and is not very susceptible to American mildew. Dan's Mistake is one of the largest of the red varieties, which is used to some extent by market growers as a punnet fruit to follow Leveller. Yellow Warrington is interesting as being a yellow variety with red hairs, which occasionally produces a red fruit or a fruit with red stripes. *M. G.*

* *A Handbook of Hardy Fruits more Commonly Grown in Great Britain.* Stone and Bush Fruits, Nuts, etc. By Edward A. Bunyard, F.L.S., London: John Murray, pp. 258. Price 10s. 6d.

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XIV.—GYALA.

I ONCE made some disparaging remarks about Lilies, which called forth a rebuke from Sir Herbert Maxwell; whereupon, I re-examined my feelings on the subject. No doubt my condemnation was too sweeping; perhaps, as Sir Herbert Maxwell suggested, my breakfast had disagreed with me; perhaps I was bored with the seemingly endless controversy about *Lilium Davidii*—let us hope that Professor Wright Smith and Mr. E. H. Wilson have settled that hardy annual for ever. At any rate, when I saw the Wallace collection at Chelsea in 1923, my opinion suffered a sea-change. So during the present journey I looked out for Lilies—and found none, at least, not at first. There were Lilies of a sort—the small, purple, alpine Lily, described in the last letter, and *Lilium hyacinthinum* which flowered in July. But it was not till we went to Gyala, on our way to the Himalaya, in mid-July, that we saw real Lilies.

Gyala lies some miles down the river gorge, and we had to go there in order to cross the river; also we wished to reconnoitre the entrance to the gorge. Once inside the gorge, the vegetation begins to change rapidly—the dry Tibetan country gives place to forest, which on the sheltered bank at any rate, comes right down to the water's edge. Here we found the large-coned Pine, and also the small-coned one, mixed with *Picea*, Bamboo, Maple, and other trees, and numerous climbing plants, such as *Schizandra*, *Clematis*, and *Vitis*. We met with our first *Daphne*—it had pale yellow, almost scentless flowers, and *Codonopsis convolvulacea*, with pure violet flowers, lacking the purplish eye which disfigures the Chinese plant of that name; also a *Barberry*, crowded with small, bright yellow flowers, and quite a handsome bush in full bloom. Near Gyala, we saw *Lilium giganteum*, almost over, in bogs, in the thicket, growing eight feet high; and in the forest there was

also a "Martagon" Lily in bud—this was on July 19.

We tried to get down the gorge below Gyala, but the river was now at its highest (Fig. 37), the path under water, and though we waded in waist deep we did not make much progress in the short time at our disposal. The river here was lined with Poplar trees and bushes—*Barberry*, Willow, Rose, *Elaeagnus*, *Hippophae*, etc., with a tangle of *Smilax* and other climbing plants; so that cutting a path through the dense growth on the steep cliff side was very arduous. When we returned to Gyala ten days later, after our second trip to the Himalaya, the river had fallen twelve feet below a measured mark!

A day's march up river from Gyala took us into much drier and more inhabited country, but did not take us quite out of the gorge, or beyond the great rapids. The river here, in flood, is a wonderful sight, more like an angry sea than a river; the Salween, the Mekong, even the Yangtze itself, are puny by comparison.



FIG. 37.—THE TSANGPO IN FULL FLOOD AT THE ENTRANCE TO THE GORGE.

On the schist rocks in the gorge, *Didisandra lanuginosa* was in flower, also a small, golden-flowered *Saxifrage*. But the only plant here in bloom of possible horticultural value was an *Onosma*, with sky-blue, tubular, bell flowers. It grew in the gravel and sand by the river.

Other plants noted were the *Ceratostigma* previously recorded, with bright blue flowers, species of *Impatiens*, and a white-flowered *Androsace*, very like *A. Henryi*, and I think, identical with a plant I found some years ago on the N.E. frontier of Burma. The usual low level *Rhododendrons* were met with—the "*Triflorum*," "*Taliense*," and "*Lepidotum*" species, only the last-named in flower; but these did not grow very close to the river. It is not until you get some distance below Gyala, where forest grows to the water's edge on both sides, that *Rhododendrons* begin to form forests by themselves at so low an altitude.

I have, of course, omitted mention of many other plants noted. Long lists of names, unless one is writing a catalogue, are dull reading, and quite unnecessary; my object here is to give an impression of the flora, both by the selection of types (especially such as are of garden value) and by a brief description of the scenery and plant formations met with. Details can be filled in according to taste—or knowledge.

On our return to Gyala we found the "Martagon" Lily, previously noted in bud, now in bloom. It was not very common here, but its pink flowers, closely and evenly speckled with purple, and delightfully fragrant, marked it out as a plant of value. It was not till ten days later, in another part of the country, that we found it in quantity.

The river, as I have stated, had now fallen twelve feet, so while the kit was being slung across (an operation which took a whole day) we made a second attempt to go down stream some three miles to the next big bend, where there was a huge rapid. The track was now out of water, and we had no great difficulty in reaching our objective, though a cliff in one place, and a furious, unbridged torrent in another, caused temporary stoppages.

Having taken a look down the next twist of the gorge, and laid our plans for an attack upon it in the winter, we returned to Gyala. Then came the agonising trip across the rope bridge, which is one hundred yards in length; they take five minutes to

haul you across, and it seems an eternity. We spent another uncomfortable night in the draughty, leaky, flea-ridden monastery on the left bank, and on the following day, the last of July, began the climb to the pass above. It is too steep for pack animals, so we took porters. The short spell of fine weather we had enjoyed for two days now came to an end, and before mid-day it had begun to rain. We soon got into the forest—*Picea* and Oak, with the "Grande" *Rhododendron*; but before long this was replaced by *Juniper*, heavily draped with moss. Here and there we came into open meadows, where large *Compositae*, *Umbelliferae*, *Labiatae*, and species of *Impatiens* grew waist high and drenched us to the skin as we brushed through. In the forest there was a lot of the "*Sonchifolia*" *Primula*, with its great Cabbage-like leaves, now waxing gross; the capsules were, for the most part, already reduced to a mucilaginous pulp, and where this was not the case, the seeds had long ago been sluiced out of the open cups by the rain. Two days later, however, on the other side of the pass, I found a few capsules with ripe brown seeds still clinging to them, and collected a few for luck. The Cherry-coloured *Primula*, with *Sonchifolia*-like capsules, was also having its still green seeds sluiced out to lie in the loam till next spring. Late in the afternoon

*The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 6, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, and July 18, 1925.

we camped in an open meadow, at about 13,000 feet. Several large glaciers occupied the head of the valley.

On August 1 we had an arduous march in pouring rain, climbing up a very steep face to the alpine moorland, and camping in a marsh at an altitude of nearly 15,000 feet. I found a curious little golden-flowered Saxifrage with its five petals arranged, not symmetrically, but round two sides of a circle, recalling *S. diptera*, except that the petals were of uniform size. In the alpine region, clumps of the deep violet *Cyananthus*; lavender, bloodshot *Codonopsis*; the tailed "Muscarioid" *Primula*; and a froth of white-flowered *Polygonum* supplied a little colour. There was also a large-flowered *Lloydia*—flowers white with a brownish-orange patch at the base; a tiny cream-coloured *Roscoea*, amazingly fragrant for its size; and several yellow Saxifrages. But there was not a *Rhododendron* in flower anywhere, nor were they in great variety here.

It was but a short climb to the pass on August 2, but the rain continued as though it would never stop, and we were glad to descend to lower altitudes as quickly as we could. The screes and cliffs at 15,000 to 16,000 feet were covered with yellow *Cremnathodium*, Saxifrages, dwarf blue Poppy, and large, woolly *Saussureas*. In the meadows below, both the pale and dark "Sikkimensis" *Primulas* were a fine sight, filling the stream beds.

There is one alpine plant of which I have so far made no mention, though we first saw it towards the end of June—the giant *Rheum*. This is the Sikkim plant, not *R. Alexandrae*, and it does not, like the latter, grow in great colonies, but is dotted over the alpine slopes. It is a bigger plant altogether than *R. Alexandrae*, attaining a height of eight feet. Also it grows at a most astonishing rate. In June you see it all over the *Rhododendron*-clad hills, a stripe of pale yellow here, another there, a third yonder, very luminous against the dark moorland, like a lighthouse, and visible a mile or two away. The Tibetans eat the young stems; we tried it too, but decided that it required a little dressing.

During the long descent to the *rong*, we passed first through *Juniper* and *Abies* forest, then into *Picea* forest, and here I found again the "Roxieanum" *Rhododendron*, first noticed on the *Nam La*; so that this species, like others first found on the Himalaya, and subsequently discovered further north, occurs on both sides of the river.

The three-days crossing of the range in vile weather, the dismal camps, and the arduous ascent and descent by a steep goat track, not always easy to follow, caused us to hate this pass as we had hated no other; and we had almost reached the *rong*, a few miles below the home village, before we met with our reward. Up to this point I had not seen a single plant of interest which we had not previously met with; and now in the forest I found our tenth Poppy—and an exciting one too. It was a dwarf, yellow-flowered species, with the long slender capsule of *Meconopsis lancifolia*; not perhaps a plant of great horticultural merit—the rather small flowers, of no very pronounced yellow, will not appeal to the horticulturist, but undoubtedly a plant of very considerable botanical interest. Indeed, I know of no other dwarf, yellow-flowered species—this one does not exceed ten inches in height, so it is a true dwarf. It may even prove a better garden plant than I anticipate, for I saw it under distinctly adverse conditions, past its first youthful bloom, and battered and bedraggled by rain; it should, at any rate, prove quite hardy, a woodland plant coming from an altitude of 11,000 to 12,000 feet, and it looks suspiciously like an annual. Its nearest ally is the Sikkim *M. lyrata*.

Late in the afternoon we reached the *rong*, a few miles below our home, to find

the meadows and cornfields bathed in sunshine again, though the mountains were still muffled in cloud. For the first time in three days we were warm and dry. Next day, in bright sunshine, we rode up the valley to our village, after an absence of nearly three weeks. A break had come in the rains, and we were able to get our clothes both washed and dried, enjoy the luxury of a hot bath, dry our specimens, and develop our photographs. *F. Kingdon Ward.*

dance of flowers to be seen. Among the taller sorts the violet spikes of varieties such as *Sir Douglas Haig* are conspicuous as are *Blue Boy* and *Millicent Blackmore*, both of which received an Award of Merit. Perhaps the tallest of all those sent in for trial is a mauve-flowered one called *The Shah*. Quite a number of mauve varieties have figured in this trial, among which *Mrs. Shirley* received an Award of Merit. An attractive pale mauve sort, which is flushed with blue, is *Nora Ferguson*. Of

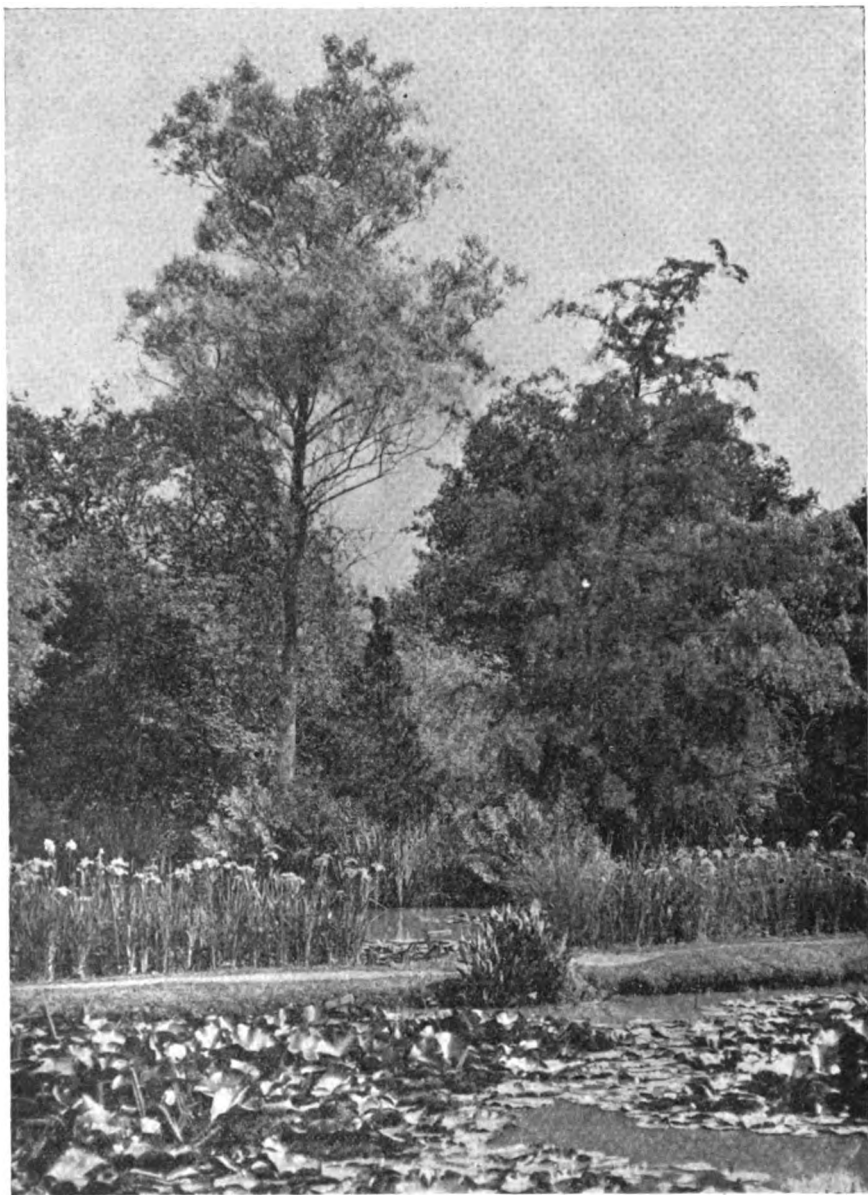


FIG. 38.—A VIEW IN THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, WISLEY.

NOTES FROM WISLEY.

In July when the ground is very dry and when plants and shrubs looked parched, trees with a cool and restful appearance are most gratifying to the eye. Such trees are to be found on the small islands in one of the round ponds at the Wisley gardens. This group includes a very handsome cut-leaved Alder *Alnus glutinosa* var. *laciniata*; a large *Salix albo-regalis* and a *Sciadopitys verticillata* (Fig. 38), with a setting of *Nymphaeas* and *Iris Kaempferi*.

In the same portion of the gardens is the *Delphinium* trial. Although this has now been judged there is still an abun-

the whites, *Mrs. Christie-Miller* is probably the best and has very regular blooms of creamy white.

The herbaceous borders are now beginning to show colour. Towards the back, groups of *Campanula lactiflora* and *Senecio Doria*—a giant Ragwort—are coming into bloom, while in the front *Erigerons* such as *E. speciosum* and the pink-flowered *E. Elsie* are in flower, together with the little yellow *Helenium pumilum* and *Aster yunnanensis*, a very early-flowering species of recent introduction. Many greyish-foliaged plants such as *Artemisia* and *Sea Hollies*, among which *Eryngium Oliverianum* and *E. Spinalba* may be mentioned, produce a good effect.

On the rock garden many interesting

plants keep coming into flower. At the present time one of the most arresting is *Dianthus Panceii* var. *grandiflora* which grows two to three feet tall and is only suitable for rock gardening on a large scale. A little orange *Mimulus* named Wheatecroft Scarlet and *Mesembryanthemum crassulinum*, which bears white flowers with an orange centre are also attractive.

Some large patches of *Gentiana Farreri* have just been planted out which, if all goes well, should add greatly to the attractions of this rock garden. Other species of *Gentiana* are now in flower, notably *G. septemfida* and *G. Purdomii*. The latter has a rosette of leaves not unlike those of a Plantain, which press closely to the ground and from which rise white-speckled blooms of a deep violet-blue.

One of the most handsome of the several shrubs in flower on the rock garden is *Cistus purpureus* with its beautiful rose-pink petals marked with deep crimson. Another rock garden shrub which never fails to make a good show at this time is *Fuchsia macrostemma* var. *discolor*; elsewhere, *Hypericum patulum* var. *Forrestii*, *Spiraea arifolia* and *Romneya Coulteri* are blooming.

In the alpine house *Campanula mirabilis* (Fig. 39) is in flower. This delightful little plant is best likened to a Canterbury Bell in miniature. It forms a flat rosette of smooth, spatulate leaves, from which the inflorescence is thrown up, though sometimes not for three or even four years. It may be grown successfully in the open, where it thrives best in a poor and barren spot. Other alpine plants in flower include *Campanula Bellardii* var. *cochlearifolium* and *Ruta patavina*, of which the maximum height is about nine inches. It does not possess the pungent odour of the common Rue (*Ruta graveolens*) of the herb garden.

Just outside the laboratory are some *Tigridias*, or Tiger flowers, and nearly related bulbous plants of the Iris family such as *Cypella Herberti*. Although many of the blooms are brilliantly marked and coloured, their life is very short, rarely outlasting one day. In the same beds is the dwarf *Agapanthus umbellatus* var. *Mooreanus* and also species of *Brodiaea* such as the well known violet *B. laxa* and a white form of *B. stellaris* distinguished by its very long pedicels.

Against the walls of the building is a pink-flowered Jasmine, *J. Stephanense*, while on the shady side of the garden-keeper's house is a scarlet splash of *Tropaeolum speciosum*. *J. G. E. White.*

AUTUMN IN THE PUNJAB.

WITH the approach of autumn the tracks and paths throughout a large part of the Himalayan region present a busy aspect, for at this season the hill Potatoes, Walnuts, Apples, and Pears find their way to market by mule load, or on the backs of the sturdy hillmen, from those snug villages far, far away down the Khud side, and which the passer-by often gazes at but seldom visits, owing to the distance and steep ascents.

From the smaller paths the main tracks and roads are reached, and here may be met, at frequent intervals, the strings of mules and ponies, with their collars of bells making cheerful music as the animals move forward at a quick pace on their way to some far off market. Long distances are travelled by these mules in one day, and the drivers, who jog along on foot, each with his string of five or six animals, see to it that their beasts are well cared for. The fine condition of these animals is very noticeable during a journey through those wonderful mountains during the period of early autumn.

The hill Potato occupies a premier place in trade, for during recent years its cultiva-

tion and improvement have been given a great impetus by the action of the Punjab agricultural authorities, who have not only paid attention to the improvement of communications, but have also distributed good Scotch seed sets among the cultivators. The work of these authorities have been of great assistance to the hill zemindars—as the farmers are called—and the result is a finer sample and better variety of the homely Potato, which is much appreciated.

The Apples and Pears of the Simla Hills, although not quite so well known as the more famous fruits from the Kulu Valley, are, nevertheless, of almost as good quality, and more trees are being planted every year. Although hail-storms are common in all the fruit-growing areas in India, from Baluchistan to Kashmir, undoubtedly the most severe occur in the spring in the neighbourhood of Chail and Simla, when the fruit blossoms are open, and they destroy what would eventually be the best fruits.

Other good products which may be seen on mule loads and coolie backs at this season are Cucumbers and the cobs of Indian Corn, the latter commonly known as "Butas" by all hill folk; both of these form part of the daily diet during the late summer months, for during and after the rains their price is low and within reach of all. The Cucumbers grow to a very large size, and their yellow and green colouring forms, with the Apples and Pears, and the golden-brown of the "Buta," a picturesque addition to the stall or the village shop. It is a case of "fruits in due season," for all along the roads and villages everyone met with is either eating fruit or cracking Walnuts. Along the roads, too, at the same time, coolies will be met, each with his load of freshly sawn green planks of the Deodar Cedar, or *Pinus longifolia*, cut from the forests all around. These trees add greatly to the beauty of the Himalayan scenery.

August, September, and October are usually most unpleasant months on the plains, as the damp heat and innumerable insect pests make life a burden, while it is perhaps the worst time in the year for that most unwelcome guest, malaria. Hence, those who have important work to do, and have experienced the excessive heat, are very thankful for the change and relaxation the mountains afford. In the hills during these months, provided the rains give a short respite, the weather and life generally can be delightful, for with the lifting of the clouds the views over hill and valley though the clear, rain-washed atmosphere is extremely beautiful and greatly enjoyed.

As the eye traverses the green-clad slopes, fringed with the darker green of Cedars or Pines, backed by tier upon tier of far-distant hills and ending in the dazzling whiteness of the snows, the traveller on his arrival from the dank heat of the plains feels that life is once more worth living. In the evening the setting sun changes into a glory of colours. As the light fades and darkness follows hard upon the heels of dusk, the crackling log fire calls a welcome to the hearth, an easy chair and snug warmth against the chill night air. A fire! To think that an easy chair beside a fire could ever again be possible after an experience in the plains below! And "so to bed" and blankets, with no punkah to disturb one's slumbers. In the cold, clear air of early morning, refreshed and invigorated the man from the plains looks once more across the valleys to the everlasting mountains of the north, amid which lies the sacred "Kailash"—the mountain abode of the immortal gods. We are thankful for the many glories of autumn in the Himalayas, the gorgeous sunsets; the double, sometimes treble, and almost complete circle of rainbows; the liquid note of the miner bird, and the blaze of autumn flowers, which remind one of the herbaceous borders at home, in England. *George Burrows, Garden Architect to The Maharajah of Patiala.*

FORESTRY.

THE GOVERNMENT FOREST POLICY.

As I had already given, in *The Gardeners' Chronicle* for July 29, 1922 (Vol. LXXII, p. 70), some reasons for believing that the imported timber of the Douglas Fir, or Oregon Pine, would never become a satisfactory substitute for that of the American White Pine (*Pinus Strobus*), now so scarce and dear, I was pleased to see Mr. A. D. Webster's article on the Government's forest policy in the issue of March 14, 1925 (Vol. LXXVII, p. 186). In my former communication I pointed out that, although the sizes in which the imported timber of the Douglas Fir can be got are in every way satisfactory, there are serious objections to its use for high-class joinery, the chief of which are its tendency to shrink after the work is finished, and its liability to warp, or "wind," which is fatal to high-class work. Another objection to it is that the surface cannot be brought to so fine a finish as that of the White Pine, the denser autumn wood of the wood rings of the Douglas Fir giving it a fine "corduroy" surface, whereas the timber of the White Pine, being of a closer and more uniform texture, can be brought to a perfectly smooth surface.

Mr. Webster deals, not with the imported Coniferous timbers, but with the extensive use of the Douglas Fir and some other exotic Conifers—the value of which as timber trees in this country is as yet unproved—by the Forestry Commission in their afforestation schemes, and I cordially agree with what he states, not only about the Douglas Fir, but also about the Sitka Spruce and the Japanese Larch. The Sitka Spruce may produce as good timber in this country as the Norway Spruce, although I do not think so, but if so it will have to be of much cleaner growth than it is at present, and as for the Japanese Larch, however valuable it may be, and undoubtedly is, for the production of mining timber and for purposes for which small poles are wanted, it will never take the place of the European species as a timber tree, while the home-grown Douglas Fir timber which I have seen was only fit for the commonest uses, such as estate fencing, and so forth, for which Larch is infinitely superior. It matters little how great a volume of timber these "newer" exotic Conifers will produce in a given time (and their growth is sometimes very rapid), as compared with what the older kinds are capable of producing, unless it is of a quality which will meet the requirements of the timber trade, and it is futile to go on planting them in such large proportions as the Forestry Commission are doing unless there is some certainty of this, and, of course, there is not.

Mr. Webster states that it is the opinion of many landowners and foresters that there is "neglect of hard-wooded trees" in the Government's "official scheme of afforestation," and that "every dealer in home-grown timber knows that the business transacted in native hard-woods is about double that of soft-woods; indeed, in not a few cases, in England at least, the dealings are entirely restricted to the former," and that in London "fully sixty-five per cent. of the native woods dealt with belonged to the hard-wood section." Here is what a Scottish timber merchant, Mr. Adam Spiers, of Messrs. Souness and Spiers, Edinburgh, states about these timbers in the descriptive pamphlet which was published in connection with the exhibit of Scottish timber and other forest products at the British Empire Exhibition at Wembley last year: "To the timber merchant familiar with the imports of foreign and colonial hard-woods, it is quite evident," states Mr. Spiers, "that there is a distinct falling off in the quality, and also

in the sizes of these timbers, which seems to point to the fact that the overseas requirements in this line are increasing year by year, and as the countries which produce these timbers develop industrially, and their own requirements increase, the possibility of a shortage in our imports of them in the near future is far from remote. To guard against this, the clear duty of this country is to give a stimulus to the production of them at home, for, so far as one can see at present, there is every prospect of an ever-increasing demand for long, straight, clean-grown, hard-wood timber of the kinds mentioned. At present the comparatively low price realised for home-grown hard-wood timber is principally due to the disproportionately large amount of short-boled, badly-grown stuff on the market, for in these times of dear labour, high costs of transport, and other necessary outlays, it is difficult to handle rough timber at a profit." The timbers referred to by Mr. Spiers are Oak, Ash, Elm, Beech, and Scots Pine, and he states that "these can be produced in Scotland of a strength and durability equal to that of timber of the same kind produced in any other part of the world."

So states the practical man, but how do these opinions square with those of the theoretical silviculturist? Let us see.

In *The Gardeners' Chronicle* of November 8, 1924 (Vol. LXXXVI, p. 311), there is a review of an article on "A Forest Policy for Land-owners," by Mr. W. E. Hiley, of Oxford, which appeared in *The Quarterly Journal of Forestry* for October 1924 (Vol. XVIII). I have not seen the article, but it would appear that Mr. Hiley is of opinion that "the day of the hard-wood forest in this country is gone, never to recur," so far, at any rate, as private land-owners are concerned, and if this be so, it must be equally true so far as the State is concerned, for if it will not pay the private owner to grow hard-wood timber, far less will it pay the State to do so. The initial cost is the dominating factor in all timber growing, and just now it is high. But in timber growing, as in other things, when the piper comes to be paid it is a much easier matter for a collection of individuals to foot the bill than it is for a single individual to do so, and probably this is the only way in which it can be done when timber is grown at a loss. No one can plant more economically than the private owner, and it would be interesting to know what it is costing the State per acre to do so at the present time. But, so far as the planting of hard-woods is concerned, this does not really matter, for the Forestry Commissioners would appear to have also reached the conclusion that the day of the hard-wood forest in this country is gone, except, perhaps, as Mr. Hiley suggests, as "insurance against fire, and as means of ameliorating soil quality"—a rather subordinate rôle, one would imagine, for valuable timber trees of this sort to play in the silvicultural problem.

But, is it the case that the day of the hard-wood forest in this country is gone, never to recur? Mr. Hiley seems to see a future supply of suitable hard-woods from "the Empire," "which cannot supply our requirements for soft-woods." As a matter of fact, except in "fancy" woods, which are chiefly used in cabinet-making, and a few others, such as Teak, Greenheart, etc., hitherto the Empire has played a comparatively small part in supplying the home market with hard-woods, and it is likely to be less able to do so in the future. For example, we import a considerable quantity of Eucalyptus timber from Australia, but, except for street paving and some other special purposes, of what use is it in the wood-working industries, or in general joinery? The bulk of the common hard-wood timbers we get from the Empire comes from Canada, but of what we get

from North America as a whole, probably a much greater proportion comes from the United States than from the Dominion. At any rate, a very large proportion of the hard-wood timbers of every-day use, such as Hickory, Elm, Oak, and Ash, which we get from this quarter of the globe are of foreign growth, and, as Mr. Spiers points out, the possibility of a shortage in the imports of this kind of timber in the near future is far from remote. There are many splendid hard-wood timbers produced within the Empire, but very few of them are suitable, owing to their expensiveness, their weight, and other handicaps, for ordinary work-a-day purposes. A. D. Richardson.

To be continued.

A NEW METHOD OF CYANIDING.

CALCIUM cyanide is being used by a rapidly increasing number of owners of glasshouses in America for the control of insect pests. It is claimed that cyaniding with this material is cheaper than the old method of using sodium or potassium cyanide in combination with sulphuric acid and water, that no danger attends its use, and, besides being easy to handle, it requires no special knowledge and is practically foolproof.

With the object of testing the merits of calcium cyanide as a glasshouse fumigant, extensive experiments have been conducted with this material in various parts of the

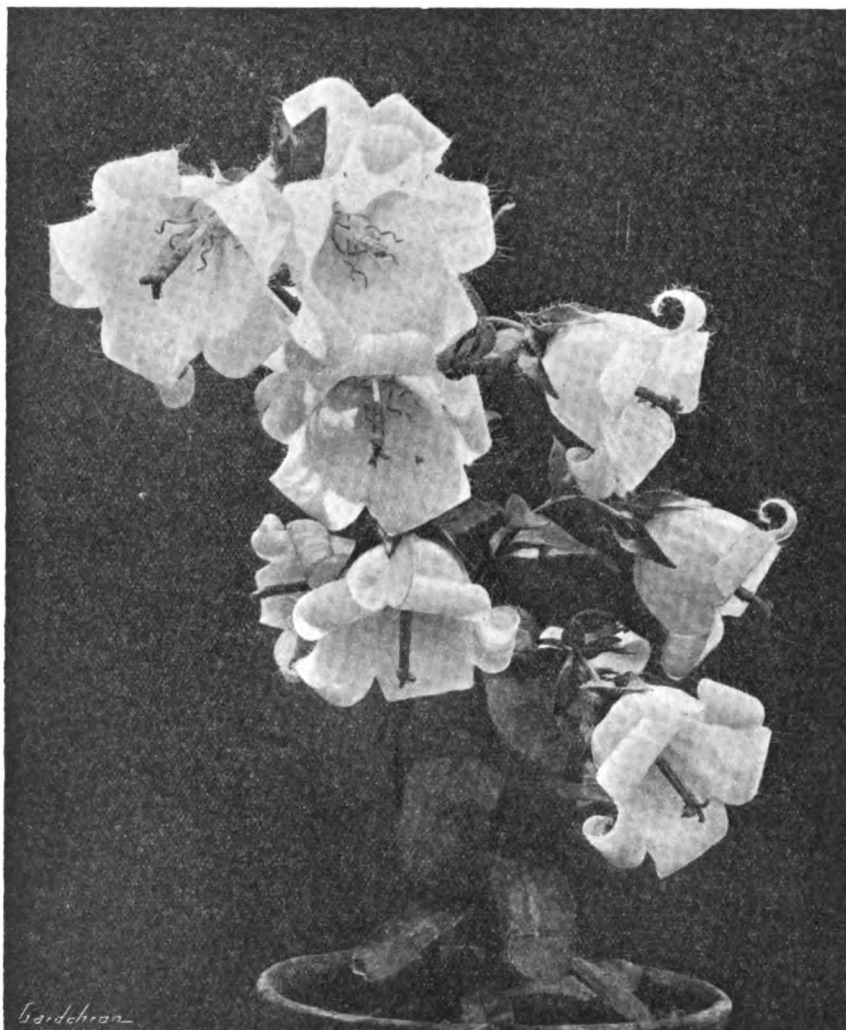


FIG. 39.—*CAMPANULA MIRABILIS*.

(see p. 91).

PUBLIC PARKS AND GARDENS.

THE City Council of Bristol is recommended to purchase Blaise Castle Estate, near Bristol, for a public park. The estate has a total area of one-hundred-and-sixty-seven acres, and comprises the castle, Roman camp, and extensive woodland; the purchase price is £18,500.

EXETER City Council is providing three additional hard tennis Courts at Heavitree pleasure grounds at a cost of £750.

THE Ministry of Health has held an inquiry into an application by the Warminster Urban District Council for sanction to borrow a further sum of £675 in connection with the pleasure grounds scheme, which includes a swimming bath and lake.

country. Often promising materials fail to give good results when used in laboratory tests or in small-scale station work and yet work quite well when used by the grower. Although guarding against error, small experiments somehow or other fail to reproduce field conditions and so the experiment goes wrong. This was the case with calcium cyanide; small experiments at first gave negative results under laboratory conditions. Then in various parts of the country the material was tried out in ordinary glass-houses with increasing success.

When calcium cyanide is exposed to the air, atmospheric moisture acts upon it, the lime absorbs water vapour, and hydrocyanic-acid gas is given off, so that for successful fumigation the air should not be too dry. At first, growers were misled by American instructions and dried the houses too thoroughly before fumigating. Increasing practice taught better, no special preparation

being at all necessary. Good results are obtained when the house is just ordinarily moist. Readers will perhaps understand better when I say there should be a "growing feeling" as one enters the door. If the house is too dry for fumigation, the paths should be thoroughly damped down a few hours previously. The ventilators should also be closed an hour or two earlier on hot days so as to ensure the presence of sufficient atmospheric moisture for the release of gas. I found in our experiments that fifty-five per cent. to eighty per cent. humidity gave good results. Above eighty per cent. the risk of injuring the plants increases and below fifty-five per cent. the gas is released too slowly to be effective.

As hydrocyanic-acid gas is readily absorbed by water, it is wise to see that there is no moisture present on the leaves or injury may result. To prevent condensation on the leaves during fumigation, the temperature should rise, not fall, a rise ensuring dry foliage and giving better results. The temperature should be between 55° and 75°. Below 55° insects are comparatively inactive and difficult to kill; above 75° the plants are very susceptible to injury by hydrocyanic-acid gas.

It is best to choose a calm evening or the morning of a dull day for fumigation. If the day be windy the rush of air will drive the gas out through the crevices between the glass or badly fitting ventilators and doors, the volume of gas remaining in the house will not be concentrated enough for effective toxicity. The ventilators should always be closed before fumigation, and all broken glass and holes should be stopped up. A damp sack will prevent any gas escaping beneath a badly fitting door.

After closing the house and making it as airtight as possible, all that is necessary is to weigh out sufficient material for the house into a wide-mouthed tin. Starting at one end, dust the calcium cyanide evenly on the path; avoid dusting the plants, as tender foliage is easily burnt when brought into actual contact with the material; there is no need to hurry; I have stayed in a house while the gas was being actively liberated for over half-an-hour without any ill-effect. Of course, it is best to make sure by locking the door after fumigation has started and placarding with warning notices. After fumigation with calcium cyanide, there is no need to air out the house, thus avoiding any check to the plants. It is also quite safe to enter and remain in the house the morning after fumigation, even though a strong smell of cyanide may be present.

DOSEAGE.

For a well-fitting house, a quarter-of-an-ounce per thousand cubic feet is the correct dose, and this will kill all aphides, the adults and larvae of white-fly and other soft-bodied insects. If a poor kill results with this amount, either the atmosphere is too dry or there is a considerable leakage. I have already explained how to correct atmospheric conditions. In the case of a leaky house, the dose should be gradually increased until the correct amount is reached. If the house contains a mixed collection of very tender plants, special precautions should be taken to secure the correct conditions; it is also advisable to begin by using one-eighth-of-an-ounce per thousand cubic feet. Though this amount will not give a one-hundred per cent. kill, it will establish a good control.

There is an American list of plants susceptible to injury during calcium cyanide fumigations, but it has been found that, provided reasonable precautions are taken, tender plants can be cyanided without injury. Such plants as Adiantum, Lettuce, Tomatos, Roses, Asparagus plumosus, Melons, Cucumbers, and many others, were successfully fumigated with a quarter-of-an-ounce per thousand-cubic-feet without any injury. Incidentally, experiments confirm the work

of American scientists who have shown that hydrocyanic-acid gas given off by calcium cyanide has a stimulating effect on growth, Tomatos especially being benefited by fumigation.

The cost of fumigating with this material compares well with other methods, one-ounce, costing twopence, being sufficient to fumigate four thousand cubic feet. To sum up, it would seem that calcium cyanide nearly reaches the grower's ideal of a fumigant, which should be cheap, safe, and a reliable control of insect pests. E. C.

HARDY FRUIT GARDEN.

APPLES FALLING.

I AM afraid the Apple crop is not going to be so good as it promised to be. In certain gardens the fruits are falling fast, reducing the crop by at least two-thirds. I think this may be accounted for in various ways. Variations of temperature have a great deal to do with it; after a burst of hot weather when the thermometer registered well into the 80's, the temperature fell to 60° from the 21st to the 27th of that month. During July 80° and over was a quite common register. Half-ripened wood from last year would, I think, play an important part in our losses. Many trees that carried a heavy crop last year have dropped again this year, but whether they will mature the crop remains to be seen. Then also the long drought has taken the moisture out of the surface soil, especially on light land.

My own experience shows that some standard trees that did not crop last year are carrying a good crop this year, but many fruits are falling; these trees were well top dressed, and there is plenty of moisture at the roots. Bush trees and cordons of Royal Jubilee, Lord Derby, Lord Grosvenor, and Cox's Orange Pippin are amongst the worst offenders, and none of them is dry at the roots. The surface soil is dry to the depth of a few inches, but not more so than I like to see on this heavy ground. The fruits that remain on the trees should develop into very fine specimens. E. Neal, Crawley.

VEGETABLE GARDEN.

TURNIPS.

THE Turnip is one of our oldest vegetables and has been cultivated in our gardens from a very early period. It succeeds best in the lighter loams which contain a fairly large proportion of sand, and although it likes a rich rooting medium in which it can make rapid growth, a soil very highly charged with humus, such as sometimes exists in old kitchen gardens, is not conducive to the production of good, clean roots.

Although succulent Turnips are appreciated at all seasons, and particularly in early spring, the crop is not a very dependable one for spring and summer use. Early sown crops are frequently subjected to spells of bad weather, which give them a check and cause them to run to seed without forming roots fit for use. Being a moisture-loving plant, it cannot withstand long periods of drought such as we have experienced during the past two months, and under these arid atmospheric conditions the roots soon become woody and useless.

For autumn and winter use, however, the maintenance of supplies of Turnips is a comparatively easy matter, but to obtain roots of good quality quick growth is essential, hence high cultivation should be practised, making the ground sufficiently rich to enable the plants to obtain nourishment readily.

Turnip seeds may be sown in successional batches from the middle of July to the first week in September on ground which has been cleared of early or second-early

Potatos, or after Peas. The ground need not be dug, but should be forked over, levelled and trodden, and a light dressing of steamed bone flour, or superphosphate, may be worked into the surface soil. Germination and early growth is very rapid, particularly in moist weather, hence early thinning should be practised, leaving the plants about four inches apart in the first stage when alternate plants may be drawn for use when about egg size. Roots should be pulled for use as wanted, as if stored for any length of time they lose flavour. After the turn of the year it may be necessary to store some, but covering a few rows with dry Bracken or leaves usually permits of pulling during ordinary spells of frost. Roots which have become full grown or those of a late sown crop, may be left for tops in the spring, when they make a useful greens. W. Auton.

HOME CORRESPONDENCE.

Messrs. Bees' Hardy Plants at Chester Show.—In the report of the Royal Show at Chester (p. 79), referring to our exhibit, your reporter states "the general opinion was that many of these plants were very near the border line of forced plants, at least many of them are not yet in flower in the south of England." We take exception to the words quoted, as not a single plant or flower in our exhibit was grown under glass, or forced in any way whatever. All were lifted from the open ground. The Secretary and members of the Horticultural Committee, together with numerous trade growers, visited our nurseries during show week and will be able to confirm this statement. We take this opportunity—with your kind permission—of correcting the rumour to the effect that the Delphiniums with which we won the premier award at the Royal Show were wholly, or in part, not grown by ourselves, but by Mr. Samuels, the noted raiser of Wrexham. The facts are (a) every spike was grown in the open ground in our own nursery at Sealand, and (b) Mr. Samuel has not in his garden a single plant of any of the varieties which were included in the group. *Bees Ltd., Liverpool.*

Sporting in Delphiniums.—I recently paid my annual visit to King's Mills House, Wrexham, to see Mr. Samuel's Delphiniums. That there were some beauties among the very new ones goes without saying. Topper, a very long-headed affair in rich tones of deep blue and reddish-purple; Lilac Queen, with an elongated, sugar-loaf spire of shapely lilac (Ridgway) flowers; and an unnamed pale beauty with an ideally arranged flower head, remain in my memory for I took no notes as I went about. This last variety will have to fight for its existence. I am sorry to say. There were four plants of it. Three out of the four had stems which must have taken the letter 'S' as their idea of straightness. This of course will never do. The variety will be given another trial in 1926. Mr. Samuel thinks it may come right. Why, I ask, did it ever go wrong? Was it the dividing-up that it did not like? What, too, is it that is responsible for the state of unstable equilibrium in which more than one of these Wrexham children find themselves. Mauve Queen has well-filled, double flowers of a very pretty mauve shade, when it is as it should be. As I saw it this year a fair number of the spikes bore only single flowers much to Mr. Samuel's chagrin. He turned my remark down with scorn when I suggested that I thought the single form an improvement! One plant had a spike of each, in its wish to please. It reminded me of the old lady who persistently displayed light and dark blue ribbons on her sweet stall at the Boat Race—"Right at last" she said when the verdict was a dead heat.

Yes, but if Mauve Queen disappoints the master with its unstableness in one direction I saw at least two others in which the boot was on the other foot. There was a good, shapely, deep blue variety which would every now and again become double. The practical view of Mr. Samuel was "How can I sell such a variety? If I put it up as a single, and purchasers find they have a double, they will naturally think I have wronged them." But what is the cause of this curious behaviour? Why should some doubles produce singles and on the other hand why should some singles go double? If it was all one way it would not appear to be so remarkable and I do not think this note would ever have been written? Is it really remarkable, or is it that my limited experience has made my geese into swans? Will some knowledgeable person please, tell us the cause of this instability? Do other famous raisers like Kelway and Blackmore and Langdon have a similar experience? *Joseph Jacob.*

Cotoneaster frigida.—In his notes on the genus *Cotoneaster* (p. 48), Mr. Ralph Arnold strangely under-estimates the dimensions of *C. frigida*, which he describes as "reaching a height of ten or twelve feet and, of rather straggling growth." On reading this I went out and measured the only one of several large specimens here that is so placed as to allow use of a hypsometer. It is thirty-eight feet high and girths five feet at one foot above the ground, below the fork of three limbs. When I began to play golf, no matter how many years ago—all club-heads were made of Crab, a material which soon gave out when the game became popular in the 'eighties. Beech was then used, and served well enough, except that the head was apt to snap at the neck. Recourse was then had to Persimmon, which I believe has been the standard material ever since; but the demand for that wood must now be pariously near exceeding the supply. Accordingly, when, a few years ago a large *C. frigida* had to be felled, it occurred to me that the timber combined the qualities of hardness and toughness so necessary in club-heads, I sent logs to three different makers, and they all agreed that it was the best wood for the purpose that they had ever handled. Last spring, a very large *Cotoneaster* was blown down. I sent the trunk to a well-known maker, who expressed himself well pleased with it, and asked me whether it would be possible to grow the tree for the manufacture of club-heads. "Certainly," I replied, "the tree is easily grown; but you will have to wait forty years before it is ready for your purpose!" A few years ago, at the request of Sir David Prain, I sent a log of *C. frigida* to Kew, where I doubt not it may be examined in the Museum. *Herbert Maxwell, Monreith.*

Surgical Operation on a Broccoli.—After reading the several notes concerning surgical operations on broken standard Roses, I venture to give the results of a similar, though less serious operation on a subject far less likely to be treated. At the beginning of October, 1923, I noticed that a Broccoli in my garden had been broken some three inches from the ground, the top remaining attached to the stem by a mere shred about a quarter of an inch wide. With the help of some twigs from an adjacent tree, and a piece of raffia, I set the fracture, bringing the parts together as closely as possible. The plant flagged a little on the following day, but in three weeks the broken parts had grown together, indeed the stem increased in size sufficiently to break the raffia in one or two places. My wife thought I was taking a great deal of trouble over a very small matter, but in the following spring, no later than the rest of the plants in the bed, an extra head of fair size and substance was my reward and provided another instance of how nature will recover herself with very little assistance. *E. J. Bryant, Purly, Reading.*

SOCIETIES.

IPSWICH AND EAST OF ENGLAND HORTICULTURAL.

THIS Society held its Floral Fête in Christchurch Park, on Wednesday, July 15, under gloriously sunny conditions. The excellence of the exhibits was wonderful when it is considered that the long drought has been probably more severe in East Anglia than elsewhere. The Mayor of Ipswich stated that the Society was the lineal descendant of a Gooseberry Society started over one-hundred years ago.

The outstanding feature of the show was the fine array of Roses. These were well shown on stands and as representative groups of cut blooms. For thirty-six blooms the premier award was won by Messrs. F. CANT AND CO. with some magnificent flowers. They were followed closely by Messrs. B. R. CANT AND SONS and Messrs. D. PRIOR AND SON. The best bloom in the show was J. G. Glassford in the exhibit of Messrs. B. R. CANT AND SONS. For twelve distinct varieties the prizes were awarded in the following order:—Messrs. F. CANT AND SONS, Messrs. B. R. CANT AND SONS, and Messrs. D. PRIOR AND SON. For twelve Tea Roses, Messrs. PRIOR AND SON were first, and Messrs. F. CANT AND CO. second.

There were some groups of cut Roses of outstanding merit and excellent arrangement. The premier award, with the silver challenge vase, was won by Mr. E. J. HICKS, of Hurst, Berks, with a splendid arrangement, including Madame Butterfly, Betty Uprichard, Clovelly, and F. H. Veitch in splendid form. Second and third prizes were taken by Messrs. F. CANT AND CO. and Messrs. B. R. CANT AND SONS.

In the amateurs' classes there were some good blooms; there were classes open to all amateurs, to those who grow no more than two-hundred-and-fifty plants, to those growing no more than one-hundred plants, and to members of the Ipswich Gardeners' Association. The exhibits were good, although they showed the effects of the heat wave.

Sweet Peas were exceptionally well-grown, and showed little evidence of the drought. A very fine display was put up by Messrs. J. K. KING AND SONS, there being some handsome vases of Royal Scot and Royal Sovereign. This exhibit won the Silver Challenge Trophy. For nine varieties, nine blooms of each, the prize-winners were Mr. A. E. GARROD, Dr. TURNBULL, and Sir G. RYAN. For six vases of six blooms the winners were Mr. G. BARNARD, Captain MILLBANK, and Mrs. BARNES. Sweet Peas were also well shown in bowls, and they were prominent in the exhibit of Mr. G. STARK, who also presented some good plants of *Sidalcea*, of which he is making a speciality, selecting them for early and late flowering.

Border Carnations were well to the fore, an excellent exhibit being arranged by Mr. H. LAKEMAN, for which he was awarded a silver challenge bowl. This grower also took the first prizes in the two other open classes. In the amateurs' classes for three varieties of "selfs" Mr. F. BLAND was first and Mrs. JUMP second. For three varieties of "perpetuals," Mrs. JUMP was first, and Mr. W. F. PAUL was second. For a vase of border varieties Mr. H. HANSON was first and Mrs. JUMP second.

In the herbaceous section there was more evidence of the trying weather conditions of the past few weeks, and of the temperature of the tents. For twelve bunches of hardy flowers there were no entries in the open class, but in the amateurs' class the prize-winners were Mr. F. S. ALDRIDGE, Mrs. JUMP, and Mr. R. RANSON. For six bunches of annuals, Mr. F. STEVENSON, Mr. W. CHRISTOPHERSON, and Mr. N. PRENTIS won in order as placed.

The floral decorations occupied a considerable space, and there was evidence of considerable skill and taste in the arrangement and choice of subjects. In the open dinner-table class Mrs. JUDGE, Mrs. BARTON, and Miss KERRY were the chief prize-winners. For Roses only, Mrs. JUDGE, Miss SNELL, and Mrs. FIELDGATE were as placed. Most of these tables were distinctly pleasing, and the judges must have experienced great difficulty in making the awards.

As might be expected, the fruit and vegetable sections were not so strong as they would have been in a normal season, but they reflected considerable credit on the exhibitors, and the wonder is that they were so good. Peas and Potatoes were exceptionally fine, when the weather is taken into account. In the open fruit classes Mrs. JUMP proved a strong competitor, securing premier honours in the classes for Black and White Grapes, Nectarines, Peaches, Cherries, and White Currants. In the Grape classes, Mr. F. STEVENSON was second. Small fruits were well exhibited.

The first prize in the open class for a collection of vegetables was won by Mr. J. D. CORBALD, Major VIVIAN was second, and Mr. W. REAVELL was third. Potatoes were well shown, but the difficulty of getting high-class Cauliflowers during a drought was emphasized, though, under the circumstances, these were highly creditable. Mr. G. LACON, Mr. J. CORBALD, Major VIVIAN, Mr. J. CATCHPOLE, Mr. W. FULLER, Mr. F. STEVENSON, and Mr. F. BARDWELL were other leading prize-winners.

In addition to the competitive exhibits there were some representative groups from trade growers. For an excellent group of shrubs, Roses, and hardy plants, Mr. R. C. NOTCUTT was awarded a handsome silver trophy. A feature which came in for a large amount of admiration was an exhibit of a garden of old-world flowers very skilfully arranged by Mr. MANN. The rock garden of Messrs. THOMPSON AND MORGAN was another source of attraction. There were also Roses from Messrs. ALLEN, Scabiouses from Messrs. I. HOUSE AND SON, and Gladioli and Delphiniums from Messrs. LOWE AND GIBSON.

SOCIÉTÉ ROYALE D'HORTICULTURE DE LIÈGE.

THE exhibition of horticultural produce recently held at Liège in connection with the Agricultural Show bade fair to be a complete failure, owing to the devastating hailstorms of the 19th May, which practically destroyed the horticultural establishments in the Liège district, and made it impossible for the local growers to contribute to any considerable extent. However, an urgent appeal for assistance was sent out to other districts, which was so generously responded to that the Show, instead of being a failure, was a complete success. From Ghent came two waggon-loads of plants; from two Brussels firms, three motor-lorries full; and numbers of Palms, Ferns, Sweet Peas, Roses, etc., from all who could possibly spare them.

Perhaps one of the finest exhibits was the collection of cut Roses in superb condition from MM. Soupert and Ketten, of Luxemburg, among which the variety Mme. Alexandre Dreux, a lovely yellow-flowered Pernetiana variety, was prominent. At Bagatelle, under trial, it won a first prize and certificate, and at Liège it was awarded a Gold Medal Diploma with felicitations.

The exhibition was opened by the Burgomaster of Liège, who was received by M. Jules Closon, the President of the Society. The Show was also visited by the Minister of Agriculture, and the King of the Belgians, as well as a number of other distinguished visitors.

ROYAL HORTICULTURAL.

JULY 28.—On this date the Royal Horticultural Hall afforded ample evidence of the holiday season, as the exhibition was not so large as usual and the attendance comparatively poor. In general interest the display compared favourably with many of its predecessors and included capital exhibits of Roses, Gladioli, Phloxes, border flowers, stove plants, Water Lilies, and Gooseberries, while an unique contribution of seed-bearing stems of many kinds of popular vegetables showed how attractive such subjects are when well arranged.

Orchid Committee.

Present: Mr. F. J. Hanbury (in the chair), Sir John Rutherford, and Messrs. R. G. Thwaites, J. C. Cowan, H. H. Smith, F. K. Sander, Chas. H. Curtis, A. Dye, H. T. Pitt, H. G. Alexander and Gurney Wilson (Hon. Sec.).

AWARD OF MERIT.

Sophro-Laelio-Cattleya Magnet (S-L-C. Virginia × Cattleya Hardyana).—A strong growing hybrid, with richly coloured flowers fully five inches wide. The ample sepals and petals are clear purplish-mauve, and the wide, frilled lip is vivid ruby-red, shading to deep purple at the marginal, fringed portion, and with old gold veining at the base. A handsome Orchid. Shown by Sir GEORGE HOLFORD (gr. Mr. H. G. Alexander), Westonbirt, Tetbury.

GROUPS.

Only two small groups of Orchids were exhibited. H. T. PITT, Esq. (gr. Mr. Thurgood), Rosslyn, Stamford Hill, again showed many interesting plants, including a fine example of *Bulbophyllum macrobolbon*, with eleven flowers; *Miltonia vexillaria* var. *Queen Alexandra*, M. v. Rev. W. Wilks, with four spikes of bloom; *Cypripedium Maudiae*, *Anguloa brevibrabris* with three flowers; *Angraecum Scottianum*, the blue *Dendrobium Victoria Reginae*, and two plants of the handsome *Brasso-Cattleya Ilene*.

Messrs. COWAN AND Co. contributed a few plants of handsome subjects, notably *Cattleya Vesta*, C. *Hardyana*, C. *Lady Veitch*, *Laelio-Cattleya Nanon* and the fine *Cypripedium Hassalli*, St. Mary's variety.

Floral Committee.

Section A.—*Present:* Messrs. Henry B. May (in the chair), Arthur Turner, Hugh Dickson, Andrew Ireland, J. B. Riding, F. Streeter, Chas. E. Pearson, D. B. Crane, F. G. Cousins, W. Howe, J. F. McLeod, D. Ingamells, W. Cuthbertson and W. D. Cartwright (sec.).

Section B.—*Present:* Mr. W. J. Bean (in the chair), Sir W. Lawrence, and Messrs. Jas. Hudson, G. W. Loder, G. Reuthe, C. Williams, E. H. Wilding, R. C. Notcutt, T. Hay, F. G. Preston, G. Yeld, E. A. Bowles and Reginald Cory.

AWARDS OF MERIT.

Dipteronia sinensis.—This native of Central China was introduced by Mr. E. H. Wilson when collecting for Messrs. Jas. Veitch and Sons, about the year 1900. In nature it becomes a tree, growing so much as twenty-five feet high, but it may also only attain the dimensions of a large bush. The long, pinnate leaves are about a foot long and very graceful. The flowers are small, greenish-white and carried in large panicles, but the full beauty of the species is not disclosed until the circular, flattish fruits have developed and are showing their bright but soft crimson colouring. The fruiting clusters are large, consequently a good specimen well furnished with them forms a distinct attraction in a garden. Shown by Sir WILLIAM LAWRENCE, Bt., Burford Lodge, Dorking.

Veronica hybrida var. *carnea.*—A shrubby plant, very free-flowering and effective. The small, light pink flowers are borne in dense

spikes, each spike of elongated, conical shape and three to four inches long. Shown by Messrs. B. LADHAMS, LTD.

Gladiolus Mrs. James Kelway.—A large-flowered white variety with soft violet pencillings on two of the inner segments.

Gladiolus Martha Washington.—In this variety the flowers are of medium size, bright cherry-red, shading to carmine at the margins and with a big deep maroon blotch on the two lower inner segments. These two Gladioli were shown by Messrs. J. KELWAY AND SON.

GROUPS.

Gladioli were an important feature of the floral exhibits and the largest collection, which filled a whole length of tabling, was arranged by Messrs. J. KELWAY AND SON. This was a selection of the best varieties, both of the large flowered and the primulinus hybrids, and the colour association was especially pleasing. The "Langprim" Gladioli were chiefly of golden and orange shades of colour and made an attractive display. Spikes of bright colour were prominent amongst the large-flowered hybrids and the chief varieties were King of Gladioli, Orby, Kelway's Crimson, Mrs. Perrie and James William Kelway. Besides these there were many other shades of colour and several sorts which have a blotch of vivid crimson at the base of the petals; Golden Dawn, which has the blotch on a soft yellow ground, and Queen Mary, which has a white ground, are good examples of this type. English Gold was also a charming variety.

A very gracefully arranged collection of Gladioli was contributed by Mr. W. J. UNWIN. The elegant primulinus hybrids predominated, and these included most of the best varieties. Amongst the large-flowered hybrids we especially admired Early Sunrise, of rosy shades; Blue Celeste, blue; and Odin, a good salmon coloured variety. A smaller collection of Gladioli was shown by Messrs. LOWE AND GIBSON in association with a collection of border Carnations of the varieties which we noted at the recent Carnation Show.

Chief amongst the collections of hardy herbaceous perennials was the extensive collection of Phloxes which Mr. H. J. JONES displayed in round baskets in a large floor group. Amongst the many varieties so well shown were Frau A. Buckner, white; Thor, salmon; Cherry Ripe, salmon-rose; Dr. Charcot, purple; Royal Purple; Lofna, lilac, with a paler centre; and Eugene Danzavilliers, a most floriferous variety of fascinating pale lilac colouring.

A selection of seedling herbaceous Phloxes, raised at Aldenham, was shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett); these illustrated a sturdy habit and a good range of colouring. Amongst the best were Minnehaha, rosy lilac; Salmon Trout, clear salmon; Pale Face, light lilac; Nulli Secundus, deep salmon; and Virgin Queen, white.

Flowering sprays of hardy annuals gathered from seed rows were attractively staged by Messrs. DANIELS BROS. Larkspurs predominated and those named Dark Blue, Mauve Rose and Brilliant Carmine were very decorative. Amongst the Godetias were Bridesmaid of the dwarf type and Double Mauve of tall habit. Sweet Sultans, Pentstemons and Marigolds were also excellent.

Under the clock, Mr. F. G. WOOD had an interesting collection of general border flowers, which included *Lilium auratum*, *L. tigrinum splendens* and *Buddleia variabilis* magnifica. The Misses HOPKINS showed various border flowers and their blue-flowered perennial Pea. A large collection of border flowers arranged by Messrs. M. PRICHARD AND SON included *Crimums*, Phloxes, *Montbretias*, and *Kniphofias*. A small selection of alpine included a lovely batch of the pale blue *Campanula Tymonsi*. A number of seedling *Sidalceas* were shown under name by Mr. H. HEMSLEY, and

these were all very free-flowering, of good habit, and clear colours. In a collection of Phloxes and Roses shown by Messrs. RICH AND Co., the former included Aegir, rich salmon, and H. K. Lester of royal purple colour.

Mr. W. YANDELL had another large collection of excellent Violas. Those of the popular bronzy shading included Redbraes Bronze, Glencoe, and Bronze Kintore. Many other varieties were equally well shown, and amongst them David Beatt, a dark, smoky maroon, attracted a deal of attention.

Roses were shown in good condition. Messrs. WATERER, SONS AND CRISP included beautiful vases of Betty Upchurch, Golden Emblem and Ariel of intense salmon-orange colouring. Mermaid, Vanity, and the new I. Zingari were prominent in a collection set up by the Rev. J. H. PEMBERTON, while Messrs. CHAPLIN BROS. showed Innocence, Betty Upchurch, Mabel Morse and J. N. Hart.

Against a wall space Messrs. L. R. RUSSELL, LTD., set up an admirable collection of stove plants. This included many well-coloured *Codiaeums* (Crotons), *Dracaenas*, *Caladiums*, *Filicium decipiens*, a graceful plant of *Aralia*-like appearance; *Adiantum John Bier*, an improved *A. Farleyense*; and *Hoya carnosa*. Overhanging the collection they had some particularly good Pitcher plants, especially of *Nepenthes mixta*, and N. Sir W. Thistle-ton-Dyer.

An exceedingly interesting collection of *Begonia Lloydii* hybrids was shown by FRANK LLOYD, Esq. (gr. Mr. M. E. Mills), Coombe House, Croydon. These were the result of crossing the above-named hybrid with unnamed tuberous-rooted varieties, and the result is very sturdy plants bearing large quantities of flowers in various shades of colour. In most cases there are three male flowers on each stem and they have Anemone-like centres. Mr. Mills informed us that it is a very good summer-bedding plant, as well as being valuable for conservatory decoration. Carnations were shown by Messrs. ALLWOOD BROS.; Mr. C. ENGELMANN, who included large vases of Topsy and Laddie; and Messrs. STUART LOW AND Co., who had good stands of Eileen Low and Lady Hindlip, a pretty white-ground fancy variety. A great many fine flowers of hardy Water Lilies were shown by Mr. AMOS PERRY, and this interesting exhibit included nearly all the best varieties. *Nymphaeas Rosita*, *Attraction*, *James Brydon* and *Escarboucle*, of bright colours; *N. Marliacea carnea*, N. Moorei, yellow, and *N. Gladstoniana*, white, were all of great merit. The exhibit also included several other water plants, particularly *Pontederia crassipes* major.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (in the chair), J. Cheal, H. S. Rivers, S. B. Dicks, Edwin Beckett, E. Neal, W. H. Divers, E. A. Bunyard and A. W. Metcalfe.

An unique and exceedingly interesting exhibit was made by Messrs. DOBBIE AND Co. with the fruiting stems of various vegetables. The chief sorts represented were Leeks, Onions, Kales, Cabbages, Turnips, Carrots, Parsnips and Parsley and in addition to its value, the arrangement was decidedly decorative. It was especially interesting to note how distinct the different varieties were either in the colour of the seed pods, or in branching and often in both characteristics. This was particularly the case with Leeks, Onions, Cabbages and Kales.

Messrs. LAXTON BROS. contributed an interesting exhibit of Gooseberries and hybrid fruits, the former included the varieties Green Gem, and Bedford Red, of their own raising. The Veitch Berry (Raspberry × Blackberry) was very much in evidence; the specimens exhibited were grown in pots and carried numerous clusters of fruits of rounder form than those of the Logan Berry. The

Worcester Berry (Black Currant $\times$ Gooseberry) was also shown.

Messrs. G. BUNYARD AND Co., Maidstone, exhibited punnets of over fifty varieties of Gooseberries. A few particularly attractive sorts were Buerdell's Yellow, Philip the First, Transparent, the small, dark Ironmonger; Napoleon le Grand, large red; Golden Gem, Careless, Duke of Sutherland, Keepsake and Companion. Several of these varieties are those grown in the north for show purposes.

Mr. H. HEMSLEY, Crawley, was also an exhibitor of Gooseberries, staging twenty-one dishes of fine fruits, the leading varieties being Cousen's Seedling, Dan's Mistake, Victoria, Whitesmith, Keepsake, White Lion, Careless, and Yellow Rough.

Mr. E. G. HART, Fremington, Barnstaple, showed Plums and Peaches grown on stocks of *Prunus pumila*. As shown, the five specimens were fruiting freely, practically as cordons, and the fruits of Czar, Jefferson, Victoria, and Coe's Golden drop Plums and Peregrine Peach were very fine.

CHERRY AND SOFT FRUIT SHOW.

THE second Cherry and Soft Fruit Show, organised by the Fruit and Vegetable Committee of the Kent Branch of the National Farmers' Union was held in the Royal Horticultural Hall, Westminster, on the 14th ult. Being held in conjunction with the fortnightly meeting of the Royal Horticultural Society and the National Carnation and Picotee Society's show, the market men's fruits got all the greater publicity by the presence of the votaries of many flower cultures. There was a good attendance considering the great heat of the day.

Some idea of the keenness of the competition may be gathered from the fact that the entries varied from ten to thirty in each class. The size and appearance of the Cherries left the Continental consignments in the markets far behind. The exhibits of Cherries consisted of one 4-lb. chip basket of a variety, except in classes eight to ten. The prizes ranged from silver cups to large silver challenge cups, &c.

The first prize for a chip of Roundell or Bedford Black was won by The Norton Orchards, Ltd., near Sittingbourne, with fine Cherries. The second prize was secured by Mr. J. W. BANNER, Bargains Hill, near Sittingbourne, the third by Messrs. H. and A. HALES, Hartlip, Sittingbourne. This variety seems to be the same as Bedford Prolific, a seedling from Black Tartarian, but harder. For a chip of Waterloo, THE NORTON ORCHARDS, LTD., were first; and they were followed by Messrs. W. J. and F. O. THOMAS; Mr. H. M. COBB, Higham, near Rochester, and Sir W. W. BERRY, Faversham, in this order.

The first prize for a chip of any other black variety was taken by the Exors. of Mr. W. R. DIXON, Cambridge, Teynham, with Malling Black Eagle; the second by Messrs. G. H. DEAN AND Co., LTD., with Bigarreau Gaucher; the third by Mr. J. D. MAXTED, Newlands, Teynham, with Noble; the fourth by Messrs. W. J. and F. O. THOMAS, with Noir de Guben; and Malling Eagle, shown by Sir W. W. BERRY, was highly commended. The first award for Napoleon was won by Mr. F. WOOD, Checker Court, near Sittingbourne; the second by Messrs. WAKELEY BROS., Rainham; the third by Mr. A. L. MERCER. The first and second prize cherries here were very highly coloured. The first prize for Amber was won by Mr. W. F. WOOD; the second was secured by Sir W. W. BERRY and the third by Mr. J. D. MAXTED. The amber of the Cherries was heavily shaded with red. The leading award for any other white was taken by Messrs. H. G. DEAN AND Co., LTD., with Bigarreau de Mezel; the second by Messrs. WAKELEY BROS., with Florence; the third by Mr. J. H.

CURLING, Perry Court, Faversham, with Ivanhoe. For any red (sour) variety, Mr. E. B. GASCOYNE, Sittingbourne, led the way with Morello; Sir W. W. BERRY followed with Kentish Red or Crown; and Mr. F. MAYLAN, Hamstreet, was third with Crown or Carnation.

For three 4-lb. chips of as many black varieties the first place was taken by the Executors of Mr. W. R. DIXON, showing Noble, Roundell, and Malling Black Eagle; the second place was taken by Messrs. G. and H. DEAN AND Co., LTD., with Black Eagle, Roundell, and Bigarreau Gaucher; Sir W. W. BERRY came third with Roundell, Bigarreau Gaucher, and Malling Black Eagle. For three varieties of white Cherries Messrs. G. H. DEAN AND Co., LTD., had the best in Bigarreau de Mezel, Florence and Napoleon; Messrs. WAKELEY BROS. followed with Amber, Napoleon and Florence; and Messrs. H. and A. HALES took third place with the last-named varieties.

For a collection of any number of varieties of Cherries not exceeding twelve, in 1-lb. punnets, the leading award was secured by Messrs. G. H. DEAN AND Co., LTD.; Mr. J. D. MAXTED was a good second and Sir W. W. BERRY came third.

Among red Gooseberries, Lancashire Lad and Whinham's Industry were popular. The first prize was secured by Messrs. WAKELEY BROS., the second by Messrs. H. and A. HALES, and the third by Mr. Wm. BALLARD, Hillside, Broom Hill, Strood, all showing the first-named variety. For a four-pound chip of any yellow Gooseberry, the first prize and challenge cup for the best exhibit of Gooseberries were won by Mr. SYDNEY WAKELEY, Church House, Rainham, who showed Brighton Mammoth; Messrs. WAKELEY BROS. followed with the same variety; Messrs. H. and A. HALES came third with Leveller. For green or white Gooseberries, all the winners showed Careless, a large white. The prizes were taken as follows:—Messrs. G. H. DEAN AND Co., LTD., Messrs. WAKELEY BROS., LTD., Mr. J. D. MAXTED, and Messrs. H. and A. HALES.

Red Currant Fay's Prolific (or Fay's Early Prolific) was the winning variety in all cases, and the prizes were taken in this order by Messrs. W. J. and F. O. THOMAS, Messrs. WAKELEY BROS., and Messrs. G. H. DEAN AND Co. For a four-pound chip of any Black Currant, the first prize and challenge cup were won by Messrs. G. H. DEAN AND Co., with Edina; Messrs. W. SEABROOK AND SONS, LTD., Chelmsford, came second with Seabrook's Black; Mr. W. F. GASKAIN, third, with the last-named.

For a collection of varieties of Raspberries, the lead was taken by Sir W. W. BERRY, with Lloyd George, Pyne's Royal, Superlative, and Red Cross; Messrs. F. and T. NEAME, The Offices, Macnade, Faversham, followed with Pyne's Royal, Superlative, Hornet, Lloyd George, and Laxton's Bountiful.

From the above account it will be seen how size rules in the market garden and markets. The small trees of Cherries, and the favourite, highly-prized varieties in private gardens are mostly all ruled out. Gooseberries, Currants, and Raspberries were all of large size in the winning exhibits. The bulk of the exhibitors came from Kent.

THE EAST MALLING RESEARCH STATION, Kent, exhibited sixteen varieties of Raspberries, in two one-pound punnets of each, not for competition, the exhibit being educational. Lloyd George and Pyne's Royal were the largest berries. North Ward, Hornet E., Norwich Wonder, Hornet A, and Devon were also good berries. The above had all been carefully selected by characters of the stems, spines, leaves, and berries, the information being printed and exhibited in tabulated form. Black Currants Boskoop Giant, Goliath, Baldwin, and French all looked well in the punnets; but the crops, in an average of four years, showed that Baldwin gave thirty-two hundredweights

to the acre; Goliath and Boskoop came next with twenty-five hundredweights; Seabrook's Black with twenty-three hundredweights, and French with twenty-one hundredweights.

ROYAL CALEDONIAN.

THE July meeting of this Society was held at 5, St. Andrew Square, Edinburgh. Mr. Robert Fife, President, in the chair. The meeting was an open one, and was devoted to a discussion on horticulture in Australasia and the necessity for trial grounds in this country.

The exhibits were:—Zonal Pelargoniums, from Messrs. DOBBIE AND Co., LTD., Edinburgh (awarded Silver Medal); *Philadelphus Virginale*, from Mr. WILLIAM CUTHBERTSON, J.P., Edinburgh; *Campanula persicifolia* Telham Beauty, from Messrs. WOOD AND MILLIGAN, Corstorphine (Award of Merit); Strawberries, from Mr. T. GRAY, Edinburgh (Cultural Certificate), and bedding *Viola Tom Douglas*, from Mr. JOHN DOUGLAS, Uphall.

PETERBOROUGH AGRICULTURAL.

THE Horticultural Section of the Peterborough Agricultural Society held its second exhibition on the 14th and 15th ult. in the beautiful show ground at Peterborough. Considering this was only the second venture, the Society and Committee must feel very proud of their success.

The horticultural exhibits were of good average quality, and the competitive classes for Roses and herbaceous flowers were a special feature. Carnations and Sweet Peas were also well represented.

Messrs. ALLWOOD BROS. were awarded a Gold Medal for a meritorious display of cut Carnations; the vases of Laddie, Topsy, Beauty of Durham and Shot Silk were fine. Other Gold Medals were awarded to Messrs. WILSON AND AGAR for a well arranged formal garden; Messrs. ELSOMS for a display of vegetables; and Mr. G. W. MILLER, for a magnificent display of hardy flowers including Delphiniums.

Silver Medals were awarded to LORD LILFORD for a fine group of Lilies and Begonias; Mr. W. D. GREEN, for a display of vegetables; to Messrs. EARNES AND SON, for rock garden, and to Messrs. WOOD AND INGRAM for Roses.

For a group of herbaceous flowers arranged for effect, the first prize was won by Messrs. EARNES AND SON with a tastefully arranged exhibit; second, Mr. W. J. BROWN. Messrs. HARKNESS AND Co., Hitchin, were placed first for a display of Roses to occupy a space ten feet by five feet; Mr. W. J. BROWN being a very close second. The class for eighteen vases of Sweet Peas brought one entry only, but this was a very fine one and was awarded the first prize, Col. PROBY (gr. Mr. Deane) being the exhibitor.

In a class for twelve vases of Sweet Peas the competition was good, Mr. NEGUENT, Allfry, being placed first with Powerscourt, Splendour and Royalty, in fine form; Mrs. McGRATH, Barwell Castle, second. For two dozen Roses Mr. G. BURCH was an easy first prize winner; Mr. C. W. BRYANT, second. The best basket of Roses was from Messrs. HARKNESS AND Co., and was easily first. Mrs. McGRATH led for hardy flowers with a strong set, while for a group of cut Carnations to occupy a space six feet by four feet Col. PROBY was awarded the first prize, his group including Princess of Wales and the old blush Malmaison in excellent condition.

For a collection of vegetables, six varieties, there were a large number of entries and Mrs. McGRATH was placed first in a severe competition, her best dishes being Onions, Peas, Beans, and Tomatos. In the class for single dishes the competition was good, and the exhibits in most cases were excellent; Potatos and Carrots were the weakest classes owing to the dry summer.

Valuable prizes were offered for table decorations. There was one open class, and one restricted to residents within a ten mile radius. The ten entries in the local class produced a very fine effect.

ROYAL OXFORDSHIRE HORTICULTURAL.

THIS Society held its Commemoration show in the charming and picturesque grounds of Magdalen College, and the officials were very fortunate in having at their disposal such a beautiful site. There was a record attendance of visitors. The exhibits were staged in two large marquees, and chief amongst the non-competitive displays of plants was one from the famous gardens of Headington Hill Hall, kindly sent by Mrs. G. H. MORRELL, whose gardener, Mr. A. Gibson, staged the group in a most artistic manner. The design took the form of a valley. Mr. Gibson presents a new design each year, and his exhibit was certainly the feature of the show.

The Roses staged by Mr. G. PRINCE and Mr. J. MATTOCK were magnificent, and the former won first prize together with the Silver Cup for his group.

The bank of Carnations staged by Mr. C. ENGELMANN won the admiration of all. It was a marvellous display of colour.

Mr. JOHNSON, of Garsington, had an excellent stand of herbaceous flowers for which he gained a first prize. Mr. JOHNSON also won another first prize in a class for a collection of herbaceous plants, and Mr. E. W. GURDEN, of Headington, took second prize.

The Sweet Pea classes included some excellent blooms. Those set up by Mr. J. MATTOCK were exquisitely arranged and secured premier honours. The second prize was awarded to Mr. W. DAY, who showed fine blooms. Some of his best varieties were Mammoth, Tom Sykes, Royal Sovereign, Pimpernel, Charming, and Powerscourt. Mrs. LESSING was placed third for her group.

Competition was very keen in the group class. Mrs. LESSING's first prize arrangement made a bold show, and Mr. T. H. ROSE, who was awarded a second prize, ran his opponent very close. Mr. W. T. MATTOCK was third with a very nice cool collection of Lilies and Fuchsias. In another class for a group of plants Mr. W. T. MATTOCK was first. Messrs. WEST AND SON were awarded a Gold Medal for their display of flowers and rock plants which was very daintily arranged. Mr. A. ROWLES had a splendid assortment of Sweet Peas and was awarded a Silver Medal.

Fruit and vegetables are not a great feature at this show as a rule, but some good produce was staged. Mrs. LESSING had the best Melon and Strawberries. Mr. WADHAM secured first prize for his collection of vegetables, while Mrs. LESSING took the second award. Some very choice table decorations were displayed. Miss DREW secured a first prize, Mr. W. T. MATTOCK a second, and Miss F. HOLLOWAY a third.

ELSTREE AND DISTRICT HORTICULTURAL.

THE summer show of this Society was held in the beautiful grounds of Aldenham Park, Elstree, on the 18th ult., and well maintained the high position it has enjoyed for so long.

In the open champion class for a collection of cut Roses, arranged for effect on a space twelve feet by four feet, there were four entries. A beautiful display secured the Silver Challenge Cup and first prize for Messrs. CHAPLIN BROS., LTD. The Roses were excellent, and among other good sorts we noticed H. V. Machin, K. of K., Los Angeles, Edith Chaplin, W. F. Dreer, Betty Uprichard,

Lord Charlemont, Mrs. Henry Bowles, and Marie. Second prize went to Messrs. R. HARKNESS AND Co., while Messrs. FRANK CANT AND Co. were placed third.

Sweet Peas were shown freely, and their quality left nothing to be desired. In the leading class for twelve vases, distinct varieties, R. H. MINEHEAD, Esq. (gr. Mr. H. Munns), St. Albans, led with grand sprays of finely coloured flowers of Orchid, Edna May, Purple Perfection, Jean Ireland, Charity, Majestic Cream, Royal Scot, Picture, Sunset, and Mrs. Tom Jones; this exhibit secured the Silver Challenge Cup for Mr. MUNNS for the second time. Mr. W. F. HEALEY was second, and Lieut.-Col. W. E. Moss (gr. Mr. J. Monger), Hilfield Park, Aldenham, third. The four exhibits of six vases of Sweet Peas, distinct, made a fine display, a grand lot of flowers securing first prize for A. F. L. COOK, Esq. (gr. Mr. M. D. Brown), Hayes. Second prize was awarded to Mr. F. STRATFORD, Apsley, and third prize to W. MARTINEAU, Esq. (gr. Mr. M. D. Bull), Boxmoor, who very close in point of merit. There were numerous other Sweet Pea classes all well filled with flowers of superb quality.

In the class for twelve bunches of hardy border flowers, Mr. MUNNS again led with good bunches of *Erigeron speciosus*, *E. Quackeress*, *Sidalcea Rosy Gem*, *Eryngium Oliverianum*, herbaceous *Phloxes*, *Delphiniums*, *Chrysanthemum maximum* and *Lythrum*; second prize was awarded to Mr. M. BULL.

J. N. HART, Esq. (gr. Mr. A. J. Smith), Potters Bar, was a good first prize winner for twelve cut Roses, distinct, winning the Silver Cup with good examples of H. V. Machin, Mrs. C. Lamplough, George Dickson, Mrs. M. F. Dennison, Freda, Coronation, and others; Mr. C. BULL, second. Very interesting was the class for six vases of garden or decorative Roses. A capital series again placed Mr. HART first, who showed Excelsa, Evangeline, Blush Rambler, Farquhar, American Pillar, and Hiawatha. Mr. A. COOK was placed second; H. R. DARLINGTON, Esq. (gr. Mr. Coleman), Potters Bar, third.

The honorary exhibits were especially noteworthy. Mr. E. BECKETT, gardener to the Hon. Vicary Gibbs, Aldenham House, as usual, staged one of his remarkable displays of vegetables. This was the feature of this section, and comprised almost every vegetable in general cultivation and many novelties, all set up in most artistic and attractive fashion. A Large Gold Medal and Silver Cup was most deservedly awarded to this noteworthy display. Major ALBERT PAM, (gr. Mr. F. Streeter), Wormley Bury Gardens, Broxbourne, arranged a charming exhibit of Water Lilies, growing in natural fashion, in association with Bullrushes and other aquatic plants, for which he was awarded a Gold Medal. Mr. J. C. ALLGROVE arranged a large table group of Gooseberries, Currants, and Cherries, which was a source of much interest to the visitors. In addition to numerous baskets of these fruits there were growing plants of the respective subjects. (Gold Medal).

MESSRS. WM. CUTBUSH AND SONS filled one end of the large tent with a splendid group of hardy flowers arranged in tasteful fashion. (Silver-Gilt Medal). Mr. C. ENGELMANN set up an attractive display of perpetual-flowering Carnations arranged most artistically in bronze vases. (Silver-Gilt Medal). Messrs. CARTER PAGE AND Co. exhibited a table group of Dahlias, hardy flowers, and a beautiful series of Violas, for which they were awarded a Silver Medal.

The show was visited by a large number of horticultural enthusiasts, who took full advantage of the opportunity afforded by the kindness of the Hon. Vicary Gibbs, President of the Society, of inspecting the unrivalled gardens of Aldenham House, which were in beautiful condition, notwithstanding the dry weather.

FALKIRK AND DISTRICT ROSE.

WITH the disappearance of the Gourrock and Helmsburgh Rose exhibitions, the only provincial show of the kind in Scotland was held on Saturday, July 25, under the auspices of the Falkirk and District Rose Society. The number of entries slightly exceeded that of 1924, but owing to the continued hot weather, the quality of the Rose blooms was not so good as formerly. Sweet Peas had also suffered from the lack of moisture, but Pansies and Violas were of outstanding merit, while Carnations were a small class.

In the Nurserymen's section, Messrs. D. AND W. CROLL, Dundee, secured the premier award for a collection of cut Roses, occupying a space six feet by three feet. The exhibit was tastefully arranged and included Mabel Morse, Miss E. Van Rossem, Una Wallace, Mrs. Henry Morse, Betty Uprichard, and the new dwarf *Polyantha* variety named Orange King. All the flowers had been cut in the young state and were at their best when the judging took place. Messrs. THOMAS SMITH AND SONS, Stranraer, were second, but as the blooms were not wired they were inclined to droop. Conspicuous on the stand was a pillar formed of perfect specimens of Isobel. The third prize went to Messrs. GEORGE PATON AND SON, Dundee, who were placed first in the open class for twenty-four blooms of not fewer than eighteen varieties: Capt. K. Stewart, George Dickson, Mrs. Lamplough, Golden Emblem, and Mrs. Courtney Page were among the best varieties shown. Messrs. T. SMITH AND SONS secured second place.

MESSRS. CROLL AND SMITH were respectively first and second for twelve blooms of Hybrid Teas, twelve blooms of crimson and twelve blooms of white Roses. Messrs. CROLL staged twelve grand specimens of H. V. Machin and also received a special award for the best Rose in the show. In the white class all the competitors relied on Frau Karl Druschki.

In the gardeners' and amateurs' section, Mr. J. B. TURNER was the most successful competitor. He was first for eighteen blooms, for twelve blooms of light varieties, for six vases of decorative Roses, for one vase of yellow and one vase of red Roses, and for a vase of single Roses. The only other class in which he competed, viz.: twelve blooms of H.T's, in distinct varieties, he got a third prize. Other prize winners in this section were Messrs. A. ANDERSON, Camelon; D. MONTGOMERY, Barnsford, and A. M. ZUILL, Falkirk.

The latter was also prominent in the amateur classes, the prize list of which also contained the names of Messrs. THOMAS STRANG, California; JOHN LOVE, Carron; A. HAY, Torphichen, and ALEX. LOVE, Carnock.

MESSRS. TORRANCE AND HOPKINS, Busby, met with conspicuous success in the three open classes for Sweet Peas, winning first prizes for eighteen vases, for twelve vases and six vases. Specimens of new varieties were a feature of these collections, and among those represented were Coralline, Wembley, Sunshine, Grenadier, Youth, and Cream Constance. In each competition Mr. H. HARPER, Kilmalcolm, was placed second. Mr. DAVID WRIGHT, Larbert, was the most successful amateur, and his first prize vase of white Sweet Peas was adjudged to be the best vase in the show.

Mr. ANDREW FRATER, Kirkliston, won all the principal events in the open Pansy and Viola classes, where Mr. HENRY ROBERTSON, Kelty, and Mr. H. MCCALL, Linlithgow divided the remaining honours, while Mr. J. PATERSON, scored in the amateur classes.

Carnations were not numerous, but competition between Mr. D. MONTGOMERY and Messrs. TORRANCE AND HOPKINS was keen. The former beat the Busby firm in the class for three vases of border self Carnations, but the latter excelled for three vases of border Carnations and Picotees.

with specimens of Lieut. Shackleton, Columbine and James Griggs.

Messrs. AUSTIN AND McASLAN, showed a large collection of Roses grown at their Cathcart Nurseries. The blooms were effectively arranged in baskets, arranged in three tiers, with five pillars against a dark background. The quality was uniformly good and specimens of Florence Izzard, John Russell, Los Angeles, Betty Uprichard, Mrs. Henry Morse, and Mrs. Lamplough, were exceptionally fine.

HIGHLAND AND AGRICULTURAL.

AFTER an interval of twenty years, the Highland and Agricultural Society held its annual four days' show at Glasgow on an extensive area of ground adjoining Bellahouston Park. The entries over all constituted a new record and the seed and nursery trade were represented on a much larger scale than previously.

The credit of creating the beauty spot of the show has to be given to Messrs. AUSTIN AND McASLAN, Glasgow, who had a natural rockery, on the face of a hill, composed of waterworn Westmoreland stone arranged so as to form a series of outcrops. A natural stream trickled from the top to the bottom and terminated in a rock-bound pool containing Nymphaeas and other aquatic plants. The ground in front of the building was laid out as a lawn with beds of Hydrangeas, Crassulas, Salvias, dwarf Dahlias, and Polyantha Roses. A collection of Roses in baskets filled the staging on either side of the entrance, and the space corresponding to that of the rockery was planted with a collection of choice shrubs. The firm supplied the floral decorations in twenty-two exhibits.

Messrs. DICKSONS, BROWN AND TAIT, Manchester, also displayed Ferns, Roses, Hydrangeas, and Viscarias, in groups, and Messrs. LITTLE AND BALLANTYNE, Carlisle, occupied a plot of ground with a good collection of shrubs.

A pretty bit of colour was provided by Messrs. SAMSON LTD., Kilmarnock, this firm staging Roses and Sweet Peas. Pelargoniums, Dahlias, Fuchsias, Roses, and Palms were principally used in the decoration of Messrs. PRINGLE AND ALEXANDER'S exhibit, and the bungalow of Messrs. ALEX. CROSS AND SONS, LTD., had a narrow bed flanking the four sides and filled with blue Hydrangeas, red Pelargoniums, and pillar Roses. The ground in front of the verandah of Messrs. J. AND J. CUNNINGHAM, Leith, was brightened by a series of little beds containing Conifers, Spiraeas, Pelargoniums, etc., and good taste was displayed in the construction of a rockery near the official headquarters, by Mr. MAXWELL HART, Glasgow.

Among the other firms represented were Messrs. E. WEBB AND SONS, Messrs. J. CARTER AND CO., and Mr. D. G. PURDIE, Glasgow.

CATALOGUES RECEIVED.

ORPINGTON NURSERIES CO., Orpington, Kent.—Irisess.
STEWART AND CO., 13, South St. Andrew Street, Edinburgh.—Bulbs.

Foreign.

DORJAT AND SONS, Lapalisse, France.—Paeonies.

SCHEDULES RECEIVED.

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.—Twenty-fifth show to be held in the City Hall, Hull, on Wednesday and Thursday, November 18 and 19.—Secretary, Mr. J. White, 90, Charlotte Street, Hull.

ABINGDON HORTICULTURAL SOCIETY.—Exhibition to be held on Thursday, August 13.—Secretary, Mr. G. Steff, 27, Spring Road, Abingdon.

DUNDEE HORTICULTURAL SOCIETY.—Summer exhibition to be held on Magdalen Green, on Thursday, Friday, and Saturday, August 27, 28, and 29; Chrysanthemum show to be held in the Drill Hall on Friday and Saturday, November 20 and 21.—Secretary, Mr. James M. Martin, 53, West Port, Dundee.

KENYSHAM AND DISTRICT HORTICULTURAL SOCIETY.—Thirty-seventh exhibition to be held on Monday and Tuesday, August 3 and 4.—Secretary, Mr. W. H. Hughes, 6, Priory Road, Kenyshaw.

ANSWERS TO CORRESPONDENTS.

NEPETA PAUL CHANDON: A CORRECTION. We regret an error that has occurred in connection with our illustration on page 28 of our issue for July 25. The plant illustrated is Nepeta Paul Chandon, exhibited at Westminster on July 14 by Mr. F. G. Wood (see page 58), but owing to a clerical error the inscription gave it as *Salvia dichroa*.

BEGONIAS FAILING: J. W. B. There was no fungus present on the growths sent, but a whole plant is required for satisfactory examination. Very possibly the damage has been caused by an attack of Botrytis, which may be controlled by cutting off dead and dying parts and reducing the supply of water at the roots.

BITTER CUCUMBERS: B. M. It is not the compost that has caused the Cucumber fruits to be bitter. Some varieties are naturally more bitter than others, but it is seldom bitter fruits occur when the plants are young and vigorous. Fumigating would not have caused the bitterness, unless it was strong enough to check growth. Thin out the shoots, top dress the plants with some good compost and feed liberally, to encourage quick, healthy growth, and then there will be no bitterness in the fruits.

BLACK ROT IN TOMATOS: T. D. Your Tomatos are affected by the fungus known as Black Rot. It is believed that this fungus gains an entrance to the fruit through minute cracks in the skin. Decayed fruits should be removed and burnt and the plants sprayed occasionally with potassium sulphide, especially when they are setting their fruits. Air should be admitted into the house on all favourable occasions, and care must be taken to prevent an excess of moisture in the atmosphere.

FRUITING OF WALNUT TREES: A. V. It is only with age that Walnuts come into full bearing, and it is not unusual for even old trees to produce nuts with poor kernels, especially when the crop of Nuts is particularly heavy. We do not know of anything that can be done to hasten bearing or to ensure a greater proportion of fertile Nuts; but it is probable that as the trees advance in age more and better Nuts will be produced. When the natural age of a Walnut tree is taken into consideration, a tree thirty-years old may be considered to be young. If pollen could be introduced from an older tree, it might produce the desired effect.

MANGOLD FAILING: R. M. It is impossible to say what the cause of the injury is, except that it is due to some insect and more likely to be due to "surface larvae" than to Springtails. If the insects can be found, they can be identified.

MELON LEAVES DISEASED: J. W. D. The disease on the Melon leaves which you submitted to us is "powdery mildew," caused by a fungus, *Erysiphe Cichoracearum*. It may be partially controlled by keeping the air as dry as possible and dusting the plants with finely powdered flowers of sulphur. Spraying with liver of sulphur is an alternative measure, and ventilation of the houses should prove beneficial. We do not expect an insecticide to have any effect on this disease. Experience has shown this disease is difficult to control once the plants have become infected, and in future years you should take all possible precautions to prevent infection in the early stages. The houses should be thoroughly cleansed in the winter, and washed down with an emulsion of cresylic acid and soft soap, while any weeds or cultivated plants

infected with powdery mildew should be cleared right away from the Melon houses.

MILDEW ON VINES: P. G. You are apparently doing all that is possible to prevent the bad attack of mildew spreading further, but it is doubtful if you are in time to save the present crop. Had you taken similar precautions at the first appearance of the mildew you might have saved the crop. Wintering plants in vineries is bad practise, as the vines should then be at rest, while admitting air by the front ventilators during the early stages of growth is fraught with considerable danger, especially when allowed as a means of lowering the temperature. A rise in the temperature will do no harm provided other cultural details are attended to. Where once a bad attack of mildew has occurred, its recurrence can only be prevented by very careful management. As a means of prevention, sulphur in some form or other should be largely used as a winter dressing, not only for the vines themselves, but in the whitewash for the walls and other available spaces. The best remedy against mildew attacks is good cultivation, i.e., attention to the various details at the right time in regard to pinching the laterals, and careful attention to heat and moisture to counteract the sudden changes in our climate.

NAMES OF PLANTS: G. W. C. *Mirabilis Jalapa*. *A. M. Clethra alnifolia*. *Polesten*. We cannot undertake to name florists' flowers; send specimens to a Rose specialist. *Brynteg*. *Tropaeolum polyphyllum*. *W. A. 1*, *Philadelphus pubescens*; *2*, *P. latifolius*; *3*, we do not undertake to name Roses; *4*, *Philadelphus Gordonianus*; *5*, *P. Lemoinei erectus*; *6*, *P. Columbianus*; *7*, *Inula glandulosa*; *8*, *Lysimachia Ephemerum*. *W. H. S. 1*, *Plagianthus Lyallii*; *2*, *Carpenteria californica*. *J. R.* *Nierembergia rivularis*.

TOMATOS SPLITTING: L. W. The general cultural details appear to be correct, but sulphate of potash should be substituted for one of the manures you are using, as it may be lack of potash in your soil that is causing the fruits to crack. Use more wood-ash and lime rubble in your compost next year, with a little sulphate of potash added, and you will not be further troubled with cracking of the fruits.

Communications Received. T.H.—F.J.C.—J.J.—G.F.W.—W.A.—M.M.—T.E.W.—B.L.—C.F.W.—G.H.C.—W.P.—J.B.R.—G.W.C.

THE LATEST TRADE MARKS.

NITROGEN (455,450).—Nitrogen Bacteria in Solution for use as a Fertiliser.—Thomas Gregoria Tulloch, 2, South Parade, Southsea, Hampshire. July 15, 1925.

MARVO (458,971).—Carbonate of Lime, prepared for use as a Fertiliser.—William Gossage and Sons, Ltd., Widnes, Lancashire. July 15, 1925.

PREMEX (459,142).—Weed Killer.—Compagnie Commerciale Du Nord (Great Britain), Ltd., 54, Gracechurch Street, London, E.C.3. July 8, 1925.

GOVERNOR (449,309).—Lawn Mowers, Grass Cutting Machines, Trailer Seat Land Rollers and Garden Rollers.—John Shaw and Sons (Wolverhampton), Ltd., Fryer Street, Wolverhampton. July 8, 1925.

The above Marks have been 'accepted' by H.M. Patent Office, and unless any objected is lodged the Marks will be duly registered. They are, however, officially advertised for opposition and all particulars and forms for opposition will be sent free by Messrs. Rayner & Co., of 5, Chancery Lane, London.

MARKETS.

COVENT GARDEN, Tuesday, July 28th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—EDS.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Hydrangea	s. d. s. d.
cuneatum	10 0-13 0	—Pink, 48's per	
—elegans	10 0-12 0	doz. ...	18 0-24 0
Aralia Sieboldii	9 0-10 0	—Blue, 48's per	
Arancarias, per		doz. ...	30 0-48 0
doz. ...	30 0-42 0	Marguerites, white,	
Asparagus plu-		48's per doz. ...	15 0-18 0
mosus ...	12 0-18 0	Nephrolepis in	
—Sprengeri ...	12 0-18 0	variety ...	12 0-18 0
Aspidistra, green	36 0-60 0	—32's ...	24 0-36 0
Asplenium, per		Palms, Kentia ...	30 0-48 0
doz. ...	12 0-18 0	—60's ...	15 0-18 0
—32's ...	24 0-30 0	Pteris, in variety	10 0-15 0
—nidus ...	12 0-15 0	—large 60's ...	5 0-6 0
Cacti, per tray,		—small ...	4 0-5 0
—12's, 15's ...	5 0-7 0	—72's per tray	
Crotons, per doz.	30 0-45 0	of 15's ...	2 0-3 0
Cyrtomium ...	10 0-25 0	—72's per tray	
Hydrangea		of 15's ...	2 0-3 0
White, 48's per		Viscarias, 48's	
doz. ...	18 0-30 0	per doz. ...	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

Achillea, per doz.	s. d. s. d.	Heather, white,	s. d. s. d.
bun. ...	6 0-8 0	per doz. bun. ...	9 0-12 0
Adiantum deco-		—pink, per doz.	
rum, doz. bun.	9 0-10 0	bun. ...	8 0-9 0
—cuneatum, per		Lapagerias, per	
doz. bun. ...	6 0-8 0	doz. blooms ...	3 6-4 0
Asparagus plu-		Lavender, per doz.	
mosus, per bun.		bun. ...	9 0-15 0
long trails, 6's	2 0-3 0	Lilium longiflorum	
med. sprays ...	1 6-2 6	per doz. ...	3 0-3 6
short ...	0 9-1 3	—speciosum	
—Sprengeri, per bun.		album, long, per	
long sprays ...	1 6-2 0	doz. ...	2 6-4 0
med. ...	1 0-1 6	—short, per doz.	3 0-4 0
short ...	0 4-1 0	—speciosum	
Asters, white, per		rubrum, long,	
doz. bun. ...	6 0-9 0	per doz. blooms	4 0-5 0
Carnations, per		—short ...	3 0-5 0
doz. blooms ...	0 9-3 0	Lily-of-the-Valley,	
Chrysanthemum		per doz. bun. ...	24 0-30 0
maximum, doz.		Orchids, per doz.	
bun. ...	3 0-4 0	—Cattleyas ...	36 0-48 0
Chrysanthemums		—Cypripediums ...	5 0-7 0
—white, per doz.		Roses, per doz.	
blooms ...	5 0-6 0	blooms, Rich-	
—bronze, per doz.		mond ...	1 6-2 6
blooms ...	2 0-3 0	—Liberty ...	1 6-2 6
—blossoms, per doz.		—Madame Butter-	
bun. ...	12 0-15 0	fly ...	1 6-2 6
Coropsis, per doz.		—Mme. A. Bel	
bun. ...	1 3-1 6	Chatenay ...	1 6-2 6
Cornflowers, per		Melody ...	1 6-2 0
doz. bun. ...	2 0-2 6	—Molly Sharman	
Croton, leaves		Crawford ...	2 0-2 6
per doz. ...	0 9-2 6	—Ophelia ...	2 0-2 6
Delphiniums, var-		—Sunburst ...	2 0-3 0
ious, per doz.		Scabiosa caucas-	
spikes ...	2 0-3 0	ica, per doz.	
Echinops, per		bun. ...	4 0-5 0
doz. bun. ...	6 0-8 0	Smilax, per doz.	
Eryngium, per		trails ...	3 0-3 6
doz. bun. ...	8 0-10 0	Statice, mauve ...	6 0-12 0
Fern, French, per		—yellow, per doz.	
doz. bun. ...	0 9-1 0	bun. ...	6 0-9 0
Gaillardia, per		—white, per doz.	
doz. bun. ...	3 6-4 0	bun. ...	6 0-9 0
Gardenias, per		—pink, per doz.	
box, 12's, 18's ...	6 0-12 0	bun. ...	6 0-9 0
Glaudioli, white,		—Sawtooth, per	
per doz. bun. ...	12 0-15 0	doz. bun. ...	8 0-12 0
—primulins, per		—latifolia, per	
doz. spikes ...	2 6-3 0	doz. bun. ...	10 0-12 0
—Halley, per doz.		—lucina, per doz.	
spikes ...	2 0-3 0	bun. ...	9 0-12 0
—Prince of Wales,		Stephanotis, per	
per doz. spikes	3 0-4 0	72 pips ...	2 6-3 0
—scarlet, per doz.		Stock, English	
spikes ...	4 0-4 6	white ...	8 0-10 0
—cream, per doz.		Sultan, white, per	
spikes ...	4 0-4 6	doz. bun. ...	4 0-6 0
—Giant White,		—mauve, per doz.	
per doz. spikes	4 0-5 0	bun. ...	4 0-6 0
Gypsophila panic-		—yellow, per doz.	
ulata, per doz.		bun. ...	5 0-6 0
bun. ...	6 0-9 0	Sweet Peas, per	
		doz. bun. ...	4 0-9 0
		Violas, per doz. bun.	1 0-1 6

REMARKS.—Outdoor blooms this morning appeared to be a considerably shorter supply owing to the heavy rains, but prices showed no change. Achillea and Alstromeria have practically finished. Asters are more numerous, both white and coloured, but show little improvement in

quality; single varieties have already made their appearance. The supply of Carnations is ample for all requirements and blooms vary in price from 9d. to 3/- per dozen, and only a small portion of those arriving are capable of another journey. Roses show little change from last week and they fluctuate in price according to quality. Large-flowered varieties of Gladioli continue to arrive in large quantities. Lilium longiflorum has risen in price since Friday last, and white and pink L. speciosum are somewhat shorter, as is also Lily-of-the-Valley. Statice are arriving in large quantities. Sweet Sultan and Sweet Peas were much reduced in quantity this morning. Stephanotis, Lapagerias, and Gardenias are meeting with a good demand, and a few Tuberose have been available during the past week. Other new lines now consist of a few Chrysanthemums, white and bronze; the white one being Sanctity, and the bronze, Mrs. J. Pearson; a few bunches of Verona have also been offered. The double Gypsophila paniculata is receiving full attention and G. elegans is practically finished for this season.

Fruit: Average Wholesale Prices.

Apples, English—	s. d. s. d.	Grapes—	s. d. s. d.
—Early Victoria,		—Muscat ...	2 6-5 0
bushel ...	3 0-6 0	—Canon Hall ...	3 0-7 0
—Grenadier ...	3 0-8 0	Grape Fruit,	
—Beauty of Bath		—Florida, finest ...	55 0-60 0
½-bushel ...	2 0-4 0	—South African,	
New Zealand, per		per case ...	35 0-38 0
case ...	14 0-17 0	Lemons, Messina,	
—Sturmer ...	10 0-16 0	per box ...	12 0-15 0
—Others ...	10 0-16 0	—Mureia ...	11 0-20 0
Tasmanian, per		—Naples ...	15 0-30 0
case ...	14 0-16 0	Melons (Forced)	
—Sturmer ...	10 0-14 0	—basket ...	12 0-20 0
Bananas ...	15 0-25 0	—Cantaloupes ...	5 0-12 6
Cherries—		Nectarines, per	
—white ...	5 0-12 0	doz. ...	6 0-21 0
—black, English ...	10 0-16 0	Oranges, Jaffa ...	16 0-18 0
—Napoleon ...	10 0-16 0	—Spanish—per case	
Currants, Black,		—300's ...	25 0-35 0
English per lb. ...	0 9-10 10	—300's ...	25 0-35 0
—Red, ½-sieve ...	5 0-8 0	—504's ...	20 0-30 0
Gages, Spanish		—South African,	
½-sieve ...	8 0-14 0	per case ...	20 0 25 0
Gooseberries,		Peaches, English	
cooking berries		per doz. ...	6 0-24 0
per ½-sieve ...	3 0-5 0	Pines ...	5 0-8 0
—dessert berries,		—South African,	
per lb. ...	0 3-1 3	box ...	6 0-7 0
Grapes—		Plums, Spanish,	
—Alicante, per lb. ...	1 6-2 6	½-sieve ...	6 0-8 0
—Island ...	1 6-2 0	—French, crate ...	6 0-8 0
—English ...	1 6-3 0	Raspberries—	
—Hamburg, lb. ...	1 6-3 0	—dessert, per lb. ...	1 0-1 9

Vegetables: Average Wholesale Prices.

Beans—	s. d. s. d.	Marrows, doz.	s. d. s. d.
—Evesham, flat ...	7 6-10 0	—tally ...	5 0-7 6
—Scarlet Runner,		Onions—	
bushel ...	6 0-8 0	—English, per cwt. ...	12 6-14 0
Beets, new, per		—Valencia ...	12 0-13 0
doz. bun. ...	3 0-4 0	—Dutch ...	11 0-12 0
Broad Beans, per		Parsnips, per cwt. ...	6 0-8 0
bushel ...	6 0-8 0	Peas, Yorkshire,	
Cabbage, per tally	10 0-15 0	per ½ bag ...	7 0-8 0
Caiflowerers, per		Potatoes—	
doz. ...	2 0-4 0	—English, per	
Carrots, new, per		cwt. ...	6 0-8 0
bag ...	7 6-8 0	—Canary Island;	
Cucumbers, per doz.	5 0-6 0	case ...	6 0-10 6
—Flats, 36's, 42's ...	12 0-18 0	Spinach "New	
Dutch Onions ...	11 0-12 0	Zealand," per	
Endive, per doz.	2 6-3 0	lb. ...	2 6-3 0
Greens, best, per		Tomatoes, English,	
bag ...	4 0-5 0	per strike—	
Horseradish, per		—Pink ...	2 6-3 0
bundle ...	2 0-2 6	—Pink & White ...	2 6-3 0
Lettuce, Cos, doz.	1 0-3 0	—White ...	2 0-2 6
—Cabbage Let-		—Blue ...	2 0-2 6
tuce ...	2 0-3 0	—Guernsey ...	1 9-2 0
Mushrooms, cups	2 0-3 0	—Dutch ...	1 0-2 0
—Broilers ...	1 3-2 0	Turnips, new, per	

REMARKS.—A general slackening in demand has brought about lower prices all round. English Tomatoes in particular have gone through a slump period, mainly owing to the excessive receipts of Dutch Tomatoes imported during the past week or so. At the time of writing there is a better feeling in this section. Cucumbers are a good trade, supplies passing out very readily. Choice fruits are in weaker request. Peaches and Nectarines are quoted lower, and hothouse Grapes, although selling fairly well, are inclined to be easier. Melons have not been favoured with good selling weather the last few days and are cheaper. English Cherries have been fairly plentiful, but the rain had some effect on their condition. Black Currants are a short supply and in keen demand at a higher price level. English Apples are coming along in better quantities; large cookers are wanted, but second grade fruits are a poor trade. Well coloured Beauty of Bath are selling well. Choice dessert Gooseberries such as Levellers are scarcer and making better prices. Spanish Gages are selling moderately well and Plums are plentiful and cheap. Some English Czar Plums have been marketed and realised good prices. Green vegetables are a fairly good trade and good business is done with salads. The Potato trade is not brisk and there are fair supplies on offer.

GLASGOW.

The cut flower market has gone from bad to worse during the past week. Owing to the incidence of the annual holidays July is generally dull, but the month's trade has been quieter than usual and as the weather continues to exert an injurious influence on the quality of the blooms, prices have not only dropped further, but quantities of Sweet Peas and Gypsophila were found to be unsaleable at times. Quantities of the former were sold at 1d. per bunch and special blooms averaged from 3d. to 5d. Good Gypsophila could be purchased at 3d. per bunch and Carnations were a drug on the market at 8d. to 1/- per dozen. Marguerites were worth 2d. to 4d. per bunch and Ophelia, Butterfly and Madame Abel Chatenay Roses made 1/6 to 3/- per doz. Gladioli were fairly steady at 1/- to 1/6 for 6's of Halley, Prince of Wales and Salmon, while The Bride averaged 3/4d. and Peach Blossom 6d. The first consignment of disbudbed bronze Chrysanthemums reached 2/- to 2/6 per bunch, while Stocks fluctuated between 6d. and 8d., and Asters were worth about 2d.

Business continued active in the fruit market where Strawberries sold from 8d. to 1/2 per lb., Raspberries 9d. to 10d., Scotch Black Currants 1/- to 1/3, English 10d. to 11d., Red Currants 5d. to 7d., White Currants 4d. to 6d., green Gooseberries 3d., red 2d. to 3d., Sulphur 4d. to 6d., black Cherries 15/- to 16/-, Napoleon 16/- to 18/-, Gages 14/- to 12/-, Plums 10/- to 12/-, Grapes 1/6 to 2/- per lb., and Peaches 6/- to 15/- per doz. Lemons were plentiful and cheap at 16/- to 18/- per case for Murcias, and Grape Fruit ranged from 38/- to 45/- according to the count. South African Oranges made 24/- to 28/- and Californian 28/- to 32/-, while Australian and New Zealand Apples, supplies of which were limited to Sturmer Pippin, varied from 17/- to 22/- per case.

The feature in the vegetable section was the sharp decline in the price of Tomatoes; Scotch made from 5d. to 8d. per lb., English came down to 4d., and Guernsey and Dutch were only worth about 2d. per lb. owing to the arrival of a large consignment of 17,000 baskets of Dutch fruit on Thursday. Lettuce averaged from 1/6 to 2/- per doz.; Cucumbers, 2/6 to 6/-; French Beans, 3d. per lb.; Peas, 7/- per bag of 40 lbs.; and Mushrooms 1/6 to 1/9 per lb.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

- 17,344.—Daube, W.—Separation of seeds. July 6.
17,447.—Hov, J. A. H.—Machines for distributing fertilisers. July 7.
17,615.—Lanzendorf, W.—Soil-samplers. July 9.
17,760.—McMaster, H. Y.—Lawn-edge trimmers. July 10.

SPECIFICATIONS PUBLISHED THIS MONTH.

- 235,810.—Martin, A. E.—Containers and distributors for seeds, or the like.
235,918.—Ellerby, C.—Hoe.
235,111.—Bonnet, M.—Appliance for setting or sowing small seeds in groups.

ABSTRACT PUBLISHED THIS MONTH.

Insecticides.—Patent No. 233 857.—A new insecticide for plants, in powder form, having a nicotine basis, has been invented by Messrs. McDougall and Howles, of Glenluce, Water Park Road, Broughton Park, Manchester. The other constituents of the preparation include powdered Derr's root or extract and an inert diluent such as calcium carbonate or calcium sulphate. Preparations containing only nicotine, or a salt of nicotine, and an inert diluent are referred to also.

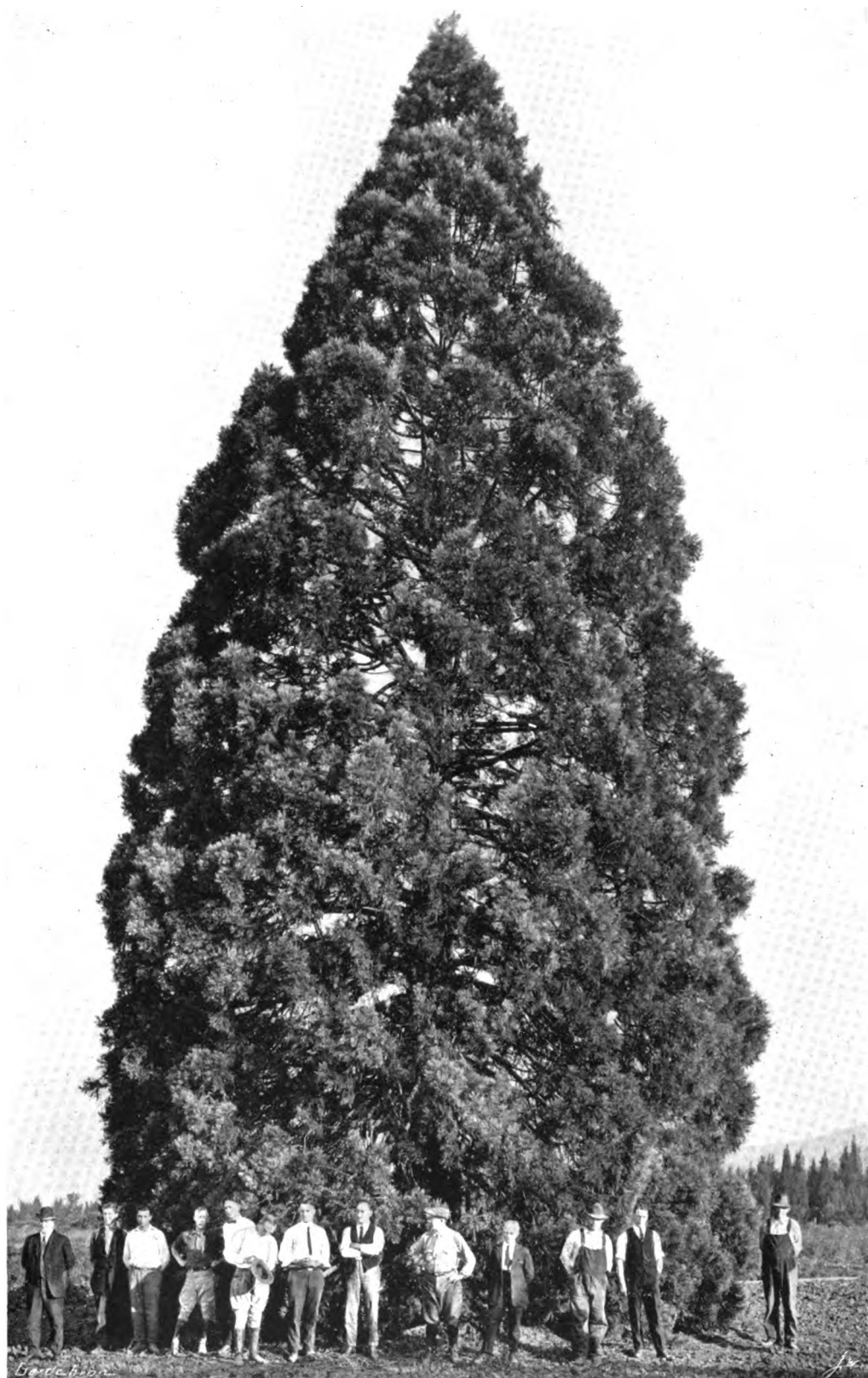
This list is specially compiled for *The Gardeners' Chronicle* by Messrs. Rayner and Co., Regd.; Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, can be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the Published Specifications and forward on post free for the price of 1s. 6d. each.

GARDENING APPOINTMENTS.

Mr. D. Coombe, for the past two-and-a-half years Gardener to E. HUNTER-HOOPER, Esq., Shelly Hill, Christchurch, Hampshire, as Gardener to Sir GEORGE MEYERICK, Bart., Hinton Admiral, Christchurch, Hampshire.

Mr. T. G. Gamage, for the past nine years gardener to the late Robert Tedcastle, Esq., Marley, Rathfriland, Co. Dublin, as gardener to F. S. Low, Esq., Kilshane House, Co. Tipperary.



SEQUOIA GIGANTEA,
IN THE GROUNDS OF THE CALIFORNIA NURSERY CO., NILES.

THE Gardeners' Chronicle

No. 2015.—SATURDAY, AUGUST 8, 1925.

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SUPPLEMENTARY PLATE.

Sequoia gigantea.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 62.4.

ACTUAL TEMPERATURE—

The *Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 5, 10 a.m. Bar. 29.9, temp. 63°. Weather, Overcast.

THE returns from our cor-

The Hardy Fruit Crops. 111-116 show that almost all the crops of hardy fruits are very unsatisfactory, and especially so in the cases of the more important kinds, such as Apples, Pears and Plums. Pears are a complete failure, but the disappointment is greatest in the case of Apples, which at one time promised to be an excellent crop, for Apple trees flowered profusely and in most places set plenty of fruits, but the latter dropped wholesale owing chiefly to the prolonged drought of spring and early summer, and partly from lack of vigour in the trees themselves. The Plum crop is as bad as it was last year, notwithstanding the promise of a good yield when the trees were in flower. Cherries are the most plentiful of stone fruits, but even these are deficient in many gardens, while the other stone-fruit crops, namely, Peaches, Nectarines, and Apricots are very poor, the last especially so. The reports are much better in the case of small fruits, which seem to be plentiful in all parts of the country, and most growers had a fair number of Strawberries, although the season of these fruits was very brief owing to the want of rain when the berries were swelling, and the hot weather in May, which caused them to ripen unduly quickly. The failure of the Nut crop completes a dismal tale. It is not easy to explain why the fruit crops have again failed; there are doubtless several reasons, the chief of which

would appear to be a lack of sunshine in late summer and autumn last year, resulting in imperfect ripening of the shoots. This is the reason given by many of our correspondents, whose experience as practical growers inclines them to this belief, and entitles their opinion to respect. But we are faced with the fact that fruit buds formed in abundance and our orchards and gardens were never more beautiful at blossoming than this spring, and even Pear trees, which yielded a bumper crop in 1924, had, in many gardens, as much blossom as usual. It has been observed that when fruit trees blossom in excess from weak, sappy shoots, the flowers are small and lacking in fertility; it is as though the essential organs of the flower are so weak as to be incapable of setting fruits. The deficiency in the fruit crops is certainly not to be attributed wholly to unfavourable weather at the time when the blossoms expanded, for the weather in most parts of the country was mild and there were few late frosts of sufficient intensity to cause much damage. Apart from the unripened condition of the wood the next reason why our gardens are so bare of fruit is the prolonged drought which followed the falling of the petals. In many instances fruits formed, but in the case of Apples a considerable number seemed incapable of swelling during the dry period and a large percentage of them dropped from the trees. The weather in June was especially trying, for that month established a record of dryness and bright sunshine. Rain fell on only two days during the whole of the month and only 0.12 inch of rain fell during the whole of the thirty days, a record unsurpassed over one hundred and ten years. The average amount of rainfall in June for the past one hundred years is 1.99 inch and the average for the thirty-five years, 1881 to 1915, is 2.02 inches. It is not surprising, therefore, that fruit trees during such dry weather, with intense sunshine during the greater part of the month, suffered severely, and in the case of the Strawberry crop, the hot, dry weather spoiled what would otherwise have been a splendid yield. Fruit trees do not appear to have suffered so much from insect pests as in some years, for most of our correspondents state that their trees are very clear of pests of all kinds, although aphides were greatly in evidence during the dry weather, especially on Plum trees. Some of our correspondents refer to the absence of pollenising insects at the time when the fruit blossom was expanded and attribute the failure partly to this reason. The fact that fruit trees, such as Apples and Pears, are cropping better on cultivated ground than in grass orchards points to the fact that moisture has a far-reaching effect upon the fruit yield when blossom is plentiful, and proves the value of fine tillage in helping to retain the moisture in the soil. Taking the various crops in detail, Apples are, as already stated, much under the average in quantity, for of 166 returns, no fewer than 98 record a yield under the average and only eight crops above the normal, with 60 of average quantity. Pears have failed practically everywhere, for out of 163 returns no fewer than 159 of our correspondents report a crop below the normal and not one single case of a yield over the average. In this case the failure was not unexpected because Pears were abundant last year in all parts of the country, and the trees were, in consequence, greatly exhausted of their energies, although it was remarkable that there was such a wealth of Pear blossom

in the spring. Of 163 returns for Plums no fewer than 126 report a yield under the average, 33 growers having average crops and only four have crops in excess of the normal. Cherries are rather better, for 84 growers report an average yield and six an over crop, but even in this case 68 out of 158 returns are given as "under." Peaches and Nectarines, which are principally grown out-of-doors on walls in this country, are very uncertain crops, and 41 returns of an average yield out of 108 is, perhaps, as good as in most seasons; still, 66 "under" crops and only one return showing a yield over the average is not very satisfactory. Apricots are no better, for our tables show only 15 crops of average yield out of 82 returns, whilst 66 returns show yields under the normal. Much the best returns are, as already stated, furnished by small fruits, which, year after year, are the most reliable of all our out-door fruit crops. This season they are exceptionally good, for of 166 returns no fewer than 106 growers record yields of average quantity and 51 over the average, with only nine below the normal. Strawberries were very disappointing, for almost up to the last they promised to be exceptionally plentiful, but the drying, sunny weather proved too much for the plants, so that not only did the berries fail to swell to a good size, but the Strawberry season was soon over. It is not a good Nut year, for 69 returns showing an "under" yield out of a total number of records of 93, points to a deficiency in most districts; Nuts are not so generally cultivated as most other fruits, but in certain districts they are planted extensively in gardens and form a welcome addition to the crops grown for dessert purposes.

Royal Gardeners' Orphan Fund.—We are pleased to learn that the executors of the late Sir Harry J. Veitch have now found it possible to pay the legacy of £500 which was bequeathed to the Royal Gardeners' Orphan Fund. We believe that this sum will be invested to help replace the amounts which had to be drawn upon during the war. We need scarcely remind our readers that during his lifetime Sir Harry Veitch was a generous supporter of this most deserving national gardening charity.

National Dahlia Society.—In connection with the National Dahlia Society's Show to be held on September 9, the Nederlandsche Dahlia Vereeniging is offering a Silver-gilt medal to supplement the first prize in Class 48 (open), for a decorative vase of Paeony-flowered Dahlias; the flowers need not be grown by the exhibitor.

Paper Pulp from Bamboo.—We learn from *The Times* that experiments made at Dehra Dun and proved under commercial conditions, show that the manufacture of paper pulp from Bamboo is a sound proposition. This discovery should be of great value to India and other eastern countries.

The Keeping Qualities of American Apples.—A consignment of Apples of the Winesap variety, from the Yakima Valley on the Pacific Coast of the United States, arrived in the Clyde on July 27th, and was sold by auction in the Bazaar on the following day at prices ranging from 15/- to 16/- per case for "choice" qualities, and 17/- to 18/6 for "extra fancies." Harvested in October last, the fruits have been sent to this country to demonstrate that Apples when properly handled may be kept in good condition and shipped 6,000 miles by land and water from nine to ten months after being gathered. The consignment was conveyed across the American continent in refrigerator cars and shipped at New York on board an Anchor Liner provided with a refrigerator hold.

French Rose Congress.—Limoges was the place chosen this year by the French Société des Roséristes for their Congress, which took place on June 13. M. Guillop, the Inspector General of Agriculture, representing the Minister of Agriculture, presided, and there was a large attendance. The members stayed three days in Limoges, visiting places of interest in the district; and the local horticultural society also took the opportunity to hold a Rose festival and horticultural show which was a great success.

Feijoa Sellowiana at Walhampton.—Mr. W. H. Honess kindly sends us flowering sprays of this beautiful Brazilian shrub of such luxuriance as to suggest that it is much hardier than is often supposed. When introduced in 1898 this Myrtle-like shrub was considered to require warm greenhouse treatment but as with some other western species, *Choisya ternata* for example, experience modifies our views, and Feijoa is now to be seen growing against a southern wall without any material protection in gardens where, as at Walhampton, rare and beautiful shrubs are appreciated. A fairly large specimen growing against a wall near the Iris garden at Kew, has withstood the winter severities for a considerable time and, on occasion, it blossoms freely, but this specimen naturally lacks the vigour and freedom of the sprays from Viscount St. Cyr's Hampshire garden. The flowers, which are freely produced, are decidedly larger than those of the common Myrtle, which in general structure they resemble. The petals are milk-white on the outside and a bright purplish-crimson within, and this bright colouring is continued in the long, golden-tipped filaments, so that the flowers possess distinct and uncommon attractions. We have no record of fruits having been produced in this country, but these are described as being "yellowish-green, egg shaped, Guava-like, richly perfumed, and of a delicious, aromatic, spicy flavour."

August Bank Holiday.—The weather on August Bank Holiday was altogether pleasant throughout the metropolitan area for although the sky was often overcast the rain kept off and the temperature was agreeable for all out-door sports and recreation. No fewer than 193,111 people paid for admission to the British Empire Exhibition, or nearly 27,000 more than on the previous August Bank Holiday. The Crystal Palace attracted 55,000 people, an increase of about 15,000 as compared with the corresponding holiday in 1924. The attendance of 44,660 at the Zoological Society's Gardens was the fourth best on record for a similar holiday. Between 30,000 and 40,000 visitors spent the day at Hampton Court and about 50,000 went to the Alexandra Palace. Kew Gardens were well patronised, but Epping Forest did not attract so big a crowd as usual. County cricket matches appear to have been well attended everywhere, while the crowds who visited public parks and gardens or engaged in sport on playing fields, lake and river all testified to the great value now placed upon out-door pleasures.

Institute Sugar-Beet Cultivation.—The data available as to areas of Sugar-Beet sown throughout the world are now almost complete and the International Institute of Agriculture states that they show, in the aggregate, a decrease of only four per cent. on last year, when the crop was greatly extended, and an increase of more than forty-two per cent. on the average area for the previous quinquennium. The crop situation at the beginning of July was satisfactory in most of the Beet-growing countries.

National Sweet Pea Society.—The annual show in 1926 of this special flower society is to be held in conjunction with the Cheltenham Horticultural Society on June 30 and July 1, at that well known western Spa. In a great measure the Cheltenham Chamber of

Commerce has taken the Horticultural Society under its wing so that the success of the fixture is assured.

Major E. G. Monro, T.D.—It is with great pleasure we publish the portrait of Major E. G. Monro, the eldest of the three sons of the late Mr. George Monro, of Covent Garden. Mr. E. G. Monro's special concern in the huge business affairs of Messrs. George Monro, Ltd., is the fruit department, whose principal offices and salerooms are in King Street, Covent Garden. He joined the firm in 1890, became a Director in 1903, and Chairman of the Board of Directors in 1919. In connection with the conduct of his business he has visited Canada, the United States of America, South Africa—including the Transvaal, Natal and the Cape Province, and the several States of the Australian Commonwealth as well as Tasmania. He has served on hosts of committees having for their purpose the various concerns of the fruit industry—packing, grading and distribution—



MAJOR E. G. MONRO, T.D.

and the welfare of those engaged therein. In 1920-21 he was chairman of the Fruit, Flower and Vegetable Markets' Associations, a position that is evidence of the wide respect in which he is held by London salesmen, while further evidence of his ability and willingness to help his business confrères is afforded by the members of the Covent Garden Tenants Association who have re-elected him as their Chairman each year since the foundation of the Association in 1922. Mr. Monro is the producer and introducer of the present non-returnable box for English Tomatoes and it is estimated that more than two million of these boxes will be used by the growers this year. During the war Major Monro served at the front with the London Scottish and was subsequently appointed to a position on the headquarters staff of the Southern Command. He is a famous marksman, and has shot for Scotland in international competitions, and was a member of the British rifle team that visited Australia in 1921.

The Arnold Arboretum Library.—We learn that the library attached to the Arnold Arboretum, Boston, U.S.A. consists of 36,000 bound volumes, 9,000 pamphlets and a collection of 12,000 photographs. About 8,000 of the photographs were taken by Mr. E. H. Wilson, the Assistant Director of the Arboretum, during his travels in many parts of the world. The library owes its foundation—as does the Arboretum itself—to Prof. Charles

Sprague Sargent, who had, up to the year 1892, collected about 6,000 books. This library he presented to the Arboretum in that year and it has been added to by gifts and purchases until it is now probably the finest of its kind in the world. The library contains many old books, including a very fine series of works by Linnaeus; Redoute's *Les Roses* and his *Les Liliaceae*; Miss Willmott's *Genus Rosa*; all the works and various editions of Asa Gray's works, and Humphrey Marshall's *Arbustum Americanum*, the first work on American trees written by an American; while books from the pen of Prof. Sargent and of Mr. E. H. Wilson, naturally occupy a prominent position. One book greatly prized is the copy of Elwes' and Henry's *Trees of Great Britain and Ireland*; the seven volumes and the index volume are bound in polished boards of British woods; Vol. I, for instance, is bound in boards cut from Beech timber used in the foundation of Winchester Cathedral and dating back to the thirteenth or fourteenth century. This set was presented to Prof. Sargent in 1915 by thirty friends whose names appear in the first volume and on whose behalf the complete work was forwarded by Mr. Gerald W. Loder. The printed catalogue of the Arnold Arboretum Library, with its cross-references and indices, fills two quarto volumes, containing, together, 1,324 double column pages.

Lundy Island.—All visitors to the North Devon coast have seen Lundy Island which lies about eleven miles from Hartland Point and fifteen miles from Clovelly. This rocky island with its Beacon Hill rising 472 feet above sea level is to be offered for sale by Messrs. Knight, Frank and Rutley; there are about 1,047 acres and the purchaser of the freehold will enjoy "exceptional rights, privileges and immunities and freedom from rating and taxation," although the Devonshire country authorities are likely to contest this last privilege.

Scottish Sweet Pea Trials.—The trials of new varieties of Sweet Peas inaugurated by the Scottish National Sweet Pea Society were open for inspection on Saturday, July 25th, at Westwood, Helensburgh, where forty-five seedlings were grown in the open on the single-stem system by Mr. John Smellie, honorary secretary. The judges, have seen the blooms at fortnightly intervals, and their decision will be announced during the present week. Although some of the varieties were planted in autumn and others in spring, all the plants were in a forward condition and the quality of the blooms generally was high; good size, form, and absence of discolouration being prominent features. Upwards of sixty members attended the inspection. Cream Pinks form the largest colour classes, and it was in this group that one of the most distinct novelties was discovered. According to general opinion No. 37 was the finest Sweet Pea in the trials. It is a pleasing shade of coral-pink on cream, which deepens towards the base. The flowers are large, of fine form and well placed, and nearly all the stems carried fine blooms. It has been described as an improved George Shawyer. No. 14 gives a bright bit of colouring, particularly in the young state, and duplex blooms are common. No. 19 is a big, bold, waved flower with the cream-pink colour intensified in the wings, while No. 43 would probably be placed in the first three of its colour class. No. 58 is after the style of Cicely, and No. 61, a refined flower had one stem with six blooms. Several varieties were unfixed, and No. 38 contained a good crimson rogue. Of the cerise shades No. 55 was the best of the lot, but No. 12 was distinct and of considerable merit if it can be fixed. It contained two or three rogues, one of which was probably the finest white in the trials. There was one cream variety which excelled all others in that class. The shade is deep cream and the flowers are beautifully frilled with duplex standards

which gives it a massive appearance. The lavenders, three in number, closely resembled each other in a colour shade which varies in a slight degree from Powerscourt. No. 42 was the best of the trio. No. 20 included several duplex blooms. No. 62, described as a blush, was in reality a mixture of cream, white and blush. The white varieties were disappointing; No. 59 was the purest white of the lot, but the flowers lacked size and all the others were unfixed. Singularly enough, No. 54 contained a scarlet specimen and its presence could only be explained as resulting from a stray seed. No. 40 is a good crimson if the carmine rogue can be eliminated, and No. 15, blue, is not wanted where a pure strain of Mrs. Tom Jones is grown. The orange-coloured class was particularly strong, and as the flowers were grown without protection and had not the faintest suggestion of bleaching, it would seem as if the sunproof orange Sweet Pea has now been obtained. All the entries were meritorious, and even under dull conditions the colour display was charming. No. 56 is pure orange and what is uncommon in varieties of this class, five-flowered stems were numerous. No. 47 is one of the outstanding successes of the trials. It is quite distinct from any other Sweet Pea, being darker and more solid in colour, making a distinct advance in this section.

French Agricultural Appointment.—M. Hémard having resigned his position as President of the "Office Agricole" of the Seine, where he displayed much energy and devotion, M. Alfred Nombrot, the well-known nurseryman of Bourg-la-Reine, formerly Secretary at the same office, has been nominated by his colleagues as President. M. Nombrot is exceptionally well fitted for his new post on account of his unrivalled knowledge of the special cultural requirements and capabilities of the Seine district.

A Nourishing Pot.—A German scientist, Herr Leder, of Oldenburg, has invented a plant-pot made of dried cow-manure, mixed with peat and lime, which serves a double purpose. As a pot it is said to be quite satisfactory, retaining its shape indefinitely when not too freely watered, and being light in weight, is well suited for transport by rail. As a plant food it appears also to do its work well, the roots deriving nourishment gradually from the sides of the pot as they reach it. When plunged in the soil, the pot gradually disappears, being disintegrated by the damp, and its constituents are thus made fully available to the plant growing in it. The idea is an ingenious one, but not entirely new.

Forthcoming French Horticultural Congress.—The sixth Congress of the French National Federation of Horticultural Societies is to be held this year at Chalon-sur-Saône, on the 25th and 26th of September. A number of interesting subjects are on the agenda for discussion, and the local horticultural society, which is superintending the arrangements, is also organising an exhibition, which will be open from the 23rd to the 28th of September.

Appointments for the Ensuing Week.—Monday, August 10: United Horticultural Benefit and Provident Society's meeting. Tuesday, August 11: Royal Horticultural Society's Committees meet; Clay Cross Horticultural Society's show; Jersey Gardeners' Society's meeting. Wednesday, August 12: Taunton Deane Horticultural Society's show (2 days); Banffshire Horticultural Society's show; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Thursday, August 13: Aberdeen Royal Horticultural Society's Show (3 days); Abingdon Horticultural Society's show. Friday, August 14: Royal Horticultural Society of Ireland Council meeting. Saturday, August 15: Burntisland Flower show; Dalbeattie and Urr Flower Show; Dumbartonshire Sweet Pea Society's show; Fosseway Flower show.

"Gardeners' Chronicle" Seventy-five Years Ago.—The Exhibition of 1851.—The effect of the coming Exhibition of All Nations has begun to be felt even in the horticultural world. We have reason to know that clever persons are already devising improvements in the manufactured articles employed in gardens; enquiries are making about portable houses, glass cases, window gardens, ventilating mechanism, border-edgings, garden sculpture, and a crowd of things which are or would be in great demand. Gardens near London are undergoing alterations likely to increase

temptation to grant further privileges of substantial value to the Fellows. It is decided, too, that, as the exhibition in Hyde Park will be opened on the 1st of May, the first meeting of this great society, at Chiswick, shall take place on the succeeding Saturday, so that English gardeners may have the best and earliest opportunity of showing the crowd of foreigners who will then be in London, what can be done by English industry, skill and wealth. This is perhaps the best time in May for out-door meetings; the earliest days of that month being usually

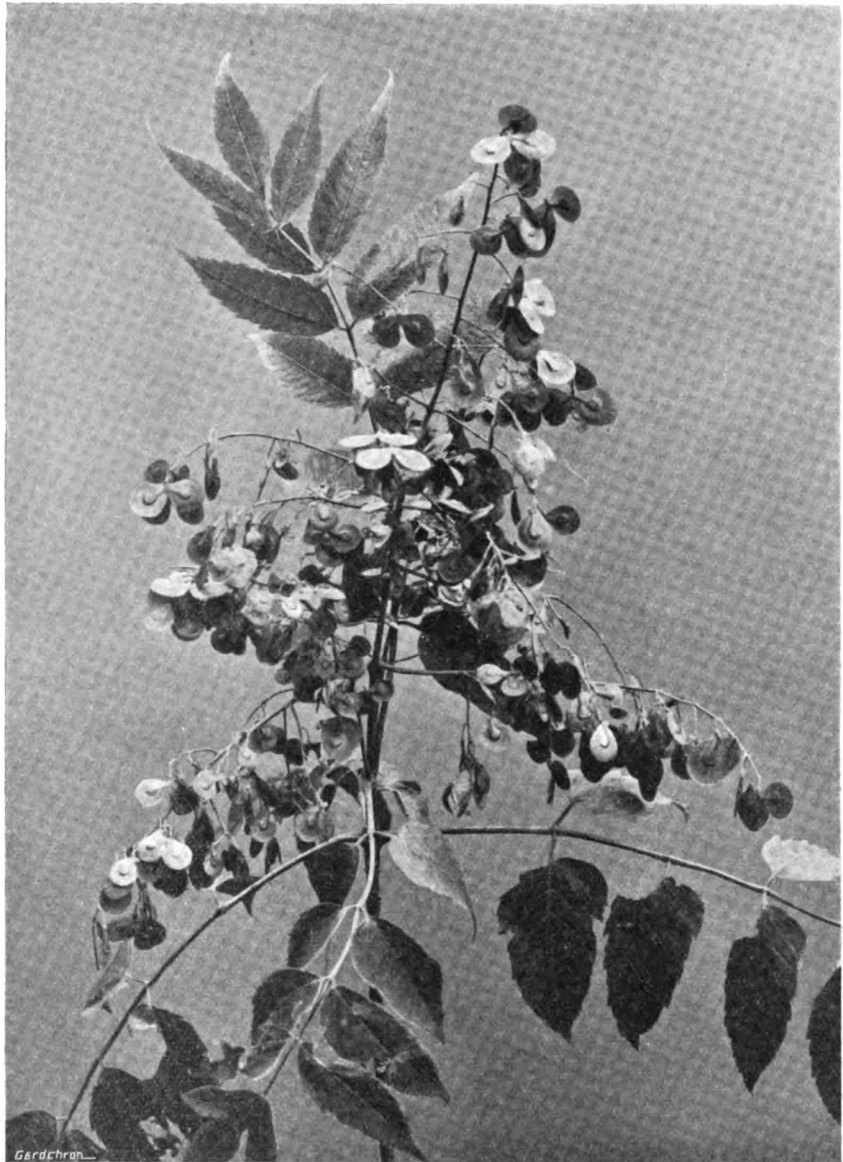


FIG. 40.—DIPTERONIA SINENSIS.

R.H.S. Award of Merit, July 28. A small tree, with big clusters of brightly coloured fruits. Exhibited by Gerald W. Loder, Esq., Wakehurst Place, Ardingly, Sussex, (see p. 96).

their attractiveness, and even societies are bestirring themselves in earnest to meet the wants of the crowds of strangers that may be expected to throng the metropolis. Acting in this spirit the Horticultural Society has just reduced the admission fee of members from six guineas to two guineas, in order that no money impediment may be offered to those who wish to join it. Its Council has also decided that for next year the number of privileged tickets (at a low price) which each Fellow may procure shall be increased from twenty-four to forty-eight, the effect of which is to give a bonus of £3 12s. per annum to each Fellow who may require tickets for himself or others; and we have reason to know that it is in con-

the finest until the end is approached. In fact, we find upon looking to the weather registers, that in twenty-five years five days only have been wet, while sixteen have been beautifully fine. *Gard. Chron.*, August 10, 1850.

Publications Received.—*Gardening for Beginners.* By E. T. Cook; eighth edition. Country Life, Ltd., 20, Tavistock Street, W.C.2. Price 16s. *Garden Receipts.* Edited by Charles W. Quin; sixth edition. Crosby, Lockwood and Son, 7, Stationers' Hall Court, Ludgate Hill, E.C. Price 2s. 6d. net. *Native Orchids of Britain.* By C. B. Tahourdin, 86, Manor Road, Wallington, Surrey. Price 5s. 4d. post free.

The Week's Work

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Dendrobiums.—Nothing could be more suitable for the successful cultivation of Dendrobiums than the tropical weather which prevailed during the month of July. The season is now approaching when many of the deciduous and semi-deciduous kinds will be completing their growths, and very soon after the terminal leaf appears the plants should be gradually submitted to somewhat cooler and drier conditions, and subjected to more air and extra sunlight, in order to consolidate and thoroughly bring the newly-made growths to maturity. It is not always advisable to remove Dendrobiums from their growing quarters immediately they appear to have finished growing. It is better, where possible, to select a position on one side of the house, where more light is admitted and less moisture given them, especially atmospherically. This partial removal may be carried out so soon as the leaf at the extremity of the bulb is completed. Care should be taken that the plants are not allowed to become too dry at the roots or to bring about any check that will cause them to finish too suddenly, as this frequently excites them afresh, whereas the buds at the base of the pseudo-bulb should remain dormant until the flowering season is over. The plants should be afforded just sufficient moisture to keep the roots in a healthy condition and to prevent any undue shrivelling of the newly-formed pseudo-bulbs.

D. Wardianum, D. crassinode and D. nobile.—These species are among the earliest to make up their growths, while many of the hybrids usually finish somewhat later, and should be treated according to their various stages of development. Previous to removing the plants from their growing quarters the new pseudo-bulbs should be tied to neat stakes.

Racemose Species.—The racemose section of Dendrobiums, of which *D. thyrsiflorum*, *D. densiflorum*, and *D. chrysotoxum* belong, are now in the middle of their growing season and should be subjected to liberal, growing conditions in an intermediate temperature, and as they commence to develop new roots from the base of the young growths any necessary re-potting may be done. *D. Dalhousianum* and its many hybrids, of which the chaste *D. Gatton Sunray* is an example, should be given a light position in the warmest house all through the growing season.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Dahlias.—These are still making strong growth and will need constant attention in the matter of tying. Remove all flowers as they fade and water the roots copiously in dry weather; occasional doses of liquid manure are helpful in the production of good flowers. If earwigs are troublesome trap them in hay-nests and bean-stalks, which should be examined daily.

Amaryllis Belladonna.—Bulbs of this beautiful plant may be planted now or during the next few weeks, but early planting is advisable to ensure good root establishment before winter sets in. Plant the bulbs near the foot of a south wall or building, in well drained soil. A good, rich compost, in which some old manure has been incorporated, should be prepared for the bulbs.

Early-flowering Bulbs.—The season of bulb-planting is again here and the early-flowering kinds should be planted or replanted as early as possible. The Erythroniums, so beautiful in the half-shaded rockery or in woodland planting, ought not to be kept out of the soil too long as the bulbs are soft and lose substance quickly. *E. Dens-canis*, the European species with bluish-rose flowers, is easily grown and spreads considerably. There are also numerous colour variations including a flesh-pink and a pure white form. Amongst the American kinds there are several good yellow sorts, including *E. californicum*, *E. Hartwegii* and *E. Nuttallianum*. Fritillaries should also be put into their permanent quarters so soon as possible. *F. Meleagris* is quaintly beautiful, seeds freely and spreads. There are also several small growing species such as *F. pyrenaica*, *F. Thunbergii* and *F. coccinea*. *F. Imperialis*, the Crown Imperial, should be planted in a position where it may remain for several years as it dislikes removal. The Scillas have soft bulbs and should be planted early, as also should the Chionodoxas which provide masses of delightful blue colour in early spring while flowers are still scarce. Snowdrops not infrequently fail if left out of the ground too long. The early-flowering bulbous Irises, *I. reticulata*, with its fragrant, purple flowers; *I. r. Krelagei* and *I. Danfordiae*, flowering as they do at midwinter, should be planted now and given a sheltered position. *Anemone blanda* and *A. apennina*, preferring light soil and partial shade; *Leucojum vernum* and *Cyclamen Coum*, charming on rock gardens; and *Eranthis hyemalis*, attractive in grass or under trees, should all be planted so soon as possible.

Crocuses.—Late planted Crocuses often appear to take no harm, but the corms are better planted early. The ill-effects of late planting is not always seen the first season as it is quite possible for bulbous plants to flower well the first year and yet fail to make good bulbs for subsequent flowering, because of late planting.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—These will now be demanding close attention in the matters of watering, tying, and disbudding. Copious supplies of water at the roots will be required during hot and drying days, nevertheless, water must not be supplied indiscriminately, but a careful examination of the individual plants should be made several times a day, and water only given to those which are really needing it. An intelligent operator will readily discern which of the plants require water, and a safe and wise rule to follow, when a doubt arises as to the immediate needs of a plant, is to withhold water until the next visit. When the plants are growing freely, the pots should be filled up with water a second time at each watering.

Feeding.—The feeding of Chrysanthemums is one of the most important matters in their successful culture, though a care should be given to the questions of when and how to apply fertilizers. As to the first, do not be in a hurry; some six weeks or so after the final potting will be quite soon enough to commence feeding. A course of weak soot-water, used each day and at each watering for nearly a week, will be a good beginning. But should the weather be wet, a top-dressing of Clay's fertilizer or an approved Chrysanthemum manure may be applied to the surface of each pot. This should suffice for a week. Subsequent feeding with well-diluted liquid manure from the cowsheds may be given at intervals; safety lies in following the

maxim of "little and often" and guarding against strong doses. As time goes on the intervals may be of shorter duration and strength of the stimulants may be increased with discretion. I advocate the practice of administering the same kind of fertilizer in safe proportions for a period of one week, with the occasional treatment for several days together of clear water only. Never water a very dry plant with liquid manure, but wait until it has received a watering with clear water.

Tying and Supporting the Plants.—The tying in of the growths will call for frequent attention, to guard against damage from wind. If not already done, the plants in the rows should be provided with further support by means of stout stakes firmly fixed in the ground at intervals, connecting them with stout cord or wire to which the sticks supporting the plants may be secured.

Disbudding.—Plants which are being grown for the production of large blooms will require constant attention to disbudding and the removal of surplus lateral growths.

Earwigs.—The crown buds will be putting in an appearance, and this is the time when the grower has to be vigilant in preventing possible damage from the attacks of earwigs. These pests may be trapped by placing short pieces of the dry stems of the Broad Bean along the surface of the pots and amongst the branches of the plants. Any insects that shelter in these traps may be blown into a bucket of hot water or into a little strong insecticide. If the traps are cleared each day, much damage and disappointment may be prevented. An early morning examination of the tips of the growths for stray insects will also be well worth while.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Watering Fruit Trees.—June and July were very hot and dry periods, and it was not until July 22 that we had rain; on that date heavy showers helped the trees in the open immensely, and most probably came in time to save many crops; the rains have also saved many newly planted trees. Trees on walls do not receive much benefit from rain at this time of year, as they are laden with foliage which sheds the water. It is necessary, therefore, to watch these trees and see they do not become dry at the roots.

Pears.—From now onwards Pear trees that are carrying good crops will need plenty of liquid manure to swell the fruits to a good size. Trees that have no fruit should not be neglected and will benefit from copious supplies of clear water, provided the water supply is equal to the demand. Trees that are resting this year will, all being well, have crops next year, and, therefore, should not be neglected now; any neglect in watering this year will adversely effect the swelling of the fruit buds for next year. These remarks apply mostly to those gardens that have a shallow, light soil, but where there is a good depth of loam much watering may not be required. On heavy clay soils it is necessary to keep the roots as near the surface as possible. Where this is done watering need not be carried out so heavily; but sufficient should be given to keep the surface soil pleasantly moist for a depth of about nine inches.

Sweet Cherries.—These are apt to be neglected after the fruits have been gathered; the borders should be examined, and if water is required the soil should receive a good soaking. After the watering, keep the surface soil well stirred to prevent the moisture from escaping by evaporation.

Plum Trees.—Plum crops are at this time of year approaching the season of ripe fruits, and the less water the trees have now the better, especially the early varieties of the Gage family. When there are likely to be heavy rains, and if it can be managed, sheets of corrugated iron laid over the roots to prevent the soil round the trees from becoming too moist is a preventive against the splitting of the fruits, an evil they are so subject to when the soil is overcharged with moisture. Orleans is a variety which splits very badly in showery weather. Many of the cooking varieties are not so adversely affected by rains, notably Prince Engelbert, Black Diamond, Belgian Purple, Victoria and Cooper's Black.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Plums.—It is advisable to give Plums under glass full ventilation and endeavour to prolong the season so much as possible as the outside crops are light in most districts. See that the borders are well supplied with moisture and stimulants during the second swelling of the fruits; a light dressing of lime will greatly help the fruits over the stoning period. When the fruits begins to colour, less atmospheric moisture will be required, otherwise they may split badly, especially those of thin-skinned varieties. Continue to keep the shoots pinched, and where the leaders are growing too strongly they should be stopped.

Pears.—Pears are swelling fast and require supporting. The best method I have found is to tie the stem of each fruit with a piece of raffia and tie the raffia to the trellis wire or, in the case of pyramid or standard trees, fasten the raffia to another branch. Keep the borders well supplied with water and use stimulants according to the extent of the crop and the growth of the tree. All fertilisers must be withheld immediately the fruits commence to colour. Keep the ventilators fully open and cover the openings with hexagon netting to prevent birds and wasps from spoiling the fruits. Keep all sub-laterals pinched back to the second leaf.

Strawberries.—Strawberry layers intended for forcing will now be ready for potting into their fruiting pots. Prepare a compost of three parts strong, fibrous loam, one part well-decayed manure free from worms, and sufficient silver sand to keep the whole open. Add a six-inch potful of bone-meal, a similar amount of mortar rubble, and a five-inch potful of soot to each barrow load. Thoroughly mix these ingredients and place the compost in the potting shed ready for use. Crock the requisite number of six-inch pots with one good stopper and several smaller crocks and cover these with a small portion of fibrous loam to keep the fine soil from entering the drainage. Pot very firmly and stand the plants closely together for a few days, syringing them overhead several times daily, and paying strict attention to watering at all times.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polenden Lacy, Dorking.

Spring Cabbage.—The main sowing of Spring Cabbage seeds may be made at any time after this date, but within the next fortnight. If the ground is in a moist condition the seeds will soon germinate, but if dry, the drills should be thoroughly soaked before the seeds are sown, so as to encourage quick germination. Cover the seed beds with some fine mesh netting to guard against the ravages of small birds. Dust

the seedlings occasionally with soot to prevent attacks from slugs.

Runner Beans.—Runner Beans are now carrying heavy crops and should be liberally watered and fed. The crop will greatly benefit from syringings in the evenings, and a good mulching along each side of the row. Gather the pods so soon as they attain a usable size; if left too long on the plants they are not only tough, but they shorten the cropping season and weaken the plants. If seeds are to be saved, it is a good plan to allow a few of the straightest and longest pods to remain for this purpose.



FIG. 41.—SEQUOIA GIGANTEA VAR. PENDULA (see p. 107).

The points of the growths should be pinched out so soon as they reach the tops of the sticks.

Spinach Beet.—Make a further sowing of Spinach Beet as ground becomes available. Thin out the plants to nine inches or twelve inches apart so soon as they are large enough. This is one of our most useful winter vegetables, owing to its hardness, so it is always advisable to have a good breadth sown with this crop.

Beetroot.—It is much the best plan to lift crops of Beetroot, more especially of the Globe type, before the roots become large

and coarse. From the first sowing that was made the roots will now be quite ready for lifting, and they should be stored in sand in a cool shed, under cover. Keep a close watch on successional crops, and lift the roots so soon as they are large enough. No useful purpose will be served in leaving the crop in the ground too long.

Endive.—Make a further sowing of Endive to furnish a successional batch of seedlings for pricking out in frames.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Border Carnations.—During the past few weeks little or no suitable "grass" for layering purposes has grown on the plants. Recent rains, however, will now soon bring the growths into a good working condition for layering, and this may then be proceeded with at once. A mixture of loam, leaf-mould and sand should be prepared and placed round each plant intended for layering. The lower leaves of four or five of the strongest selected growths should be removed before making the cut, which should pass half way through the stem and at a joint. When fixing the layer see that the tongue of the cut is kept open and the layer firmly secured with a peg in as perpendicular a position as possible; more prepared soil may then be placed firmly around the layers in order to thoroughly cover the slit portion of the stem. Give water and continue to keep the soil moist until root action has taken place.

Zonal and Ivy-leaved Pelargoniums.—Where large numbers of these are used for bedding purposes an early start should be made to propagate stock. Small batches of cuttings may now be taken from the plants at intervals of ten days without disfiguring the beds. An important point to observe when propagating Pelargoniums is the soil. Use a compost of two parts loam to one part each of leaf-mould and sand, passing the loam through a sieve with a three-quarters-of-an-inch mesh and the leaf mould through a half-inch mesh; never at any time incorporate old potting soil with compost for propagating. Failures to strike cuttings in autumn are frequently traceable to this addition.

Kitchen Garden.—Care must be taken to maintain supplies of Lettuce, and as autumn approaches the difficulty of doing so becomes greater, therefore a good sowing ought now to be made on fairly rich ground, such as a site just cleared of Potatoes. Should the use of manure be thought necessary, only that which has been well turned and is thoroughly rotted, should be applied; this addition if not buried too deeply, will assist the quick production of fine, crisp Lettuces. The ground chosen should be well exposed to the sun and sheltered from winds, as the latter do immense harm to tender foliage. Varieties suitable for sowing now are Bath Cos and Brown Dutch.

Leeks.—Those planted out for ordinary kitchen use will derive benefit from weekly applications of liquid manure, washing this in afterwards with clear water. Should any spare ground be available it is yet not too late to plant out more Leeks from the seed bed.

Fallen Fruits.—In view of the general shortage of the fruit crop attention may be directed to the need for making use of fallen Apples; these should be regularly collected and those in usable condition sent to the kitchen. If allowed to lie and rot on the ground fallen Apples often act as an undesirable attraction for wasps and blue-bottle flies.

THE GARDEN IN ANTIQUITY.

IX.—GARDEN-LORE OF ANCIENT CHINA.

If China does not possess such monuments as abound in Assyria and Egypt, it still affords the historian much valuable material for the study of its knowledge of plants in early times. We have the testimony of the picture-language; we possess a very ancient literature; we can turn to the age-long practice of medicine; the unbroken records of agriculture; the quaint usages which linked the Emperor with the plough and the Empress with the silk worm; the voluminous folk-lore; the advanced methods which existed when the country was first visited by Europeans, and other sources of information, and all combine to show that the garden has for many ages been a joy and delight to the practical Chinaman. He calls his country by many names, the most poetical, perhaps, being Hwa-Kwo, or, as it is pronounced in Canton, Fa-Kwok—the Flowery Kingdom. There are daring etymologists who connect the Chinese word for flower *Fu* with the Latin *Flos*, but the leap is too venturesome. The pictorial form of the word is one of hundreds derived from the one hundred and fortieth radical, *Ts'o* or *Ts'au*, which denotes herbs, grasses and plants in general as distinguished from *Muk* or *Muh* the symbol of a tree.

It would take us too far to deal with the origin and history of these picture signs; it must therefore suffice to say that they were in the first place more or less rude representations of the plant or tree in general. That is to say they were generic terms, the specific forms being arrived at by adding some qualifying symbol. Thus the Monthly Rose is named by the Cantonese *Mui-Kwai fu*, the Water-Lily is *Lin-fa*, and the Narcissus *Shui-sin fu* or Water Fairy flower. This latter suggests antiquity, and may be taken along with many other poetic plant-names, to indicate the wealth of folk-lore which early gathered around the native flowers and herbs. In that fascinating old dictionary known as the *Shwoh-Wan* the radical for herbs and flowers is No. 12, and in my copy no fewer than 454 words, occupying thirty pages, are ranged under this root. Let us imagine all the words in the English language relating to herbs classified under that heading, and we shall get an idea of what is here meant. When it is remembered that this dictionary is nearly as old as the Christian Era, having been completed early in the second century, we can form some estimate of the progress the Chinese had made in the knowledge of plants.

From the dictionary we may naturally pass to the early and classical literature, and by preference to the poets. If we take up the *Shi-King*, the old *Poetry Classic* of the Chinese, as Jennings calls it on the title-page of his translation, we shall find that the very first ode, dating many hundreds of years B.C. has the following lines—

Water-Lilies long and short ones—
Seek them left and seek them right.
'Twas this chaste and modest maiden
He hath sought for morn and night.

Strictly speaking the Water-Lily was a marsh flower or aquatic Gentian which was prized on account of its beauty and purity, and thus we find that in those early ages poets already delighted in using flowers as symbols, showing how carefully their powers of observation had been cultivated. We recall the words of "Canticles"—"My beloved is gone down into his garden to gather Lilies (VI. 2)." In other odes creepers are introduced—

In the South the trees bend low,
Creepers winding round them—

the bending trees (as Jennings suggests) being the natural representation of the husband and the creepers the wife. Thus we have again (Book I. i. 6) a Bridal Song—

Ho! graceful little peach-tree
Brightly thy blossoms bloom!
Go, maiden to thy husband;
Adorn his hall, his room."

I have had the misfortune to lose my copy of *Chinese Proverbs* by the Rev. W. Scarborough, but my memory is haunted with the many allusions which these proverbs contain to the Orchis or Epidendrum, and proverbs are not mushroom growths of yesternight. They come down to us from the long past, and show how flowers have interwoven themselves into the life of the people. In one of the native names for the Orchids the word *Sin*, fairy, genii, occurs, just as in the name for the Narcissus, and the impatient Balsam is known as *Fung-sin fu*, where the central word is again the epithet for fairy. When we find in the odes such phrases as "teeth like the pearly gourd seed," or "my blushing rose," we feel that we are not separated by any great distance from the authors, and yet many centuries stretch between us.

The odes are already familiar with the garden with its protecting wall (Jennings, p. 99 and elsewhere). The regular Chinese word (*Yuen* or *Un*) denotes an enclosure for flowers or vegetables, an orchard or a yard, *Fu in* being the term for a flower garden and *Ts'oi in* the equivalent of our vegetable garden. *Ts'oi* is the word for vegetables generally, as edible herbs or greens, the particular kinds being distinguished by specific epithets as *Shang-ts'oi*, Lettuce; *Ye-ts'oi*, Cabbage; and *Ngu-ts'oi*, Beans which have been sprouted. Most of these terms are ancient, and indicate that the craft of the gardener has long been established.

If we turn from the *Book of Odes* to the works of Confucius and Mencius, who flourished some five hundred years before Christ, we find many suggestive facts and allusions. The student who wishes to follow up this subject will find many aids if he turns to the Indices in Dr. Legge's *Chinese Classics*. Under the 140th radical is grouped all that relates to plants and herbs, under the 75th that which concerns trees and their derivatives, under the 31st what pertains to the garden, and so on. With this to guide us we turn to the word for gardener and are referred to *Analects* (Bk. XIII. ch. 4). Fan che requested to be taught husbandry. The Master (i.e. Confucius) said "I am not so good for that as an old husbandman." He requested also to be taught gardening, and was answered "I am not so good for that as an old gardener." That, surely, is a most valuable paragraph for the historian. It shows that already the arts of husbandry were well known and differentiated, the gardener being recognised as distinct from the husbandman. It shows that the crafts were already so far advanced that even Confucius would not profess the expert knowledge which those possessed who were recognised authorities on the question of seed-sowing and gardening operations. Very interesting is it also to find that the picture word for the garden represents an enclosure, just as the word *Yuen* or *Un* does. Confucius uses the term *Pu* or *Po* for a kitchen garden, orchard, or place for recreation. In Cantonese the word is still, after upwards of two thousand years, in regular use. A gardener is to-day, as he was in the *Analects*, *Lo-po*; a garden is *Yuen-po*, and a small farmer *Nung-po*. In Mencius (Legge's *Translation*, p. 156) we have another instructive historical fact. "After the death of Yao and Shun the principles that mark sages fell into decay. Oppressive sovereigns arose one after another, who pulled down houses to make ponds and lakes, so that the people knew not where they could rest in quiet; and threw fields out of cultivation to form gardens and parks, so that the people could not get clothes and food. Afterwards corrupt speakings and oppressive deeds became more rife: gardens and parks, ponds and lakes, thickets and marshes became more numerous, and birds and beasts swarmed. By the time of Chow the empire was again in a state of confusion."

In this passage the word translated garden is the familiar *Yuen* while the term for park is *Yu* or *Yau*. This latter word, which,

like the words for garden, *Po* and *Yuen*, is represented pictorially as an enclosure, is employed somewhat frequently in the works of Mencius. It is the equivalent of the Persian Paradise. Thus we have (Legge, p. 29) a discussion on the relative sizes of the parks of certain Kings. Into one the grass-cutters and fuel-gatherers had the privilege of entrance, as had also the men who caught pheasants and snared rabbits or hares. In the other were deer, but he who killed one of these was held guilty as though he had killed a man. This recalls the forest laws of England in the olden time.

In the South of China the word *Yau*, written as in the days of Mencius, still signifies a park or an inclosure for animals, an aviary or a menagerie. It is a walled enclosure or paddock: and a deer park is called *Luk-yau*, while the term *Yuen-yau* is the regular phrase for gardens and parks, exactly as in the passage which I have quoted above. *Hilberic Friend*.

NOTICES OF BOOKS.

The Gardener.

THIS book* of 280 pages is meant to take the place of an old one entitled *The Amateur's Practical Garden Book*, which had been reprinted many times. It includes 275 genera of plants, from annuals to Palms (the latter grown in dwelling houses), vegetables, and fruit. The book being meant for the benefit of amateurs, does not extend to special features of gardening, like landscape, arboriculture, Orchids, and other cults, those having been dealt with in the author's *Manual of Gardening*. The whole book is like a dictionary, being arranged alphabetically, under common or popular names where that is possible; and a botanical name is sometimes used, but cross-references are freely used to give a clue to the names under which the descriptions are given.

The cultural details, though usually brief, are to the point and excellent. The popular names are often the same as in this country, but sometimes extend to other plants. The old Dusty Miller was *Auricula*, but here it is also applied to *Lychnis coronaria* and *Centaurea gymnocarpa*. Hen-and-Chickens includes *Echeveria secunda* and the common Houseleek. Here the Garden Pink is *Dianthus plumarius*, in America it is *D. chinensis*; Bachelor's Button is *Centaurea Cyanus*; Arrow-leaves is meant for Arrow-head; the wild Columbine is the Honeysuckle. The botanical names are much the same as in this country, but there are some exceptions, such as *Cydonia oblonga* for *C. vulgaris*; and *Hosta* for *Funkia*, though *Niobe* has recently been revived for the latter. Although the author gives great prominence to popular names, he has a strong penchant for giving botanical names to garden plants, such as *Rubus loganobaccus* for the Loganberry, and *Delphinium cultorum* for the modern garden improvements. Foxgloves are usually perennial in America, Sweet Williams perennial, and Hollyhocks essentially biennial, probably owing to the climate. The Blue Laceflower (*Trachymene coerulea*) seems to have been "discovered" in America, for very few in this country took any notice of it until recently, although it had long been grown at Kew. The book contains sixteen plates, reproduced from photographs, on special paper, as well as sixteen line engravings which add greatly to the value of the book. Large type makes it easy to read; and the editing is equal to the usual excellent standard of the author.

* *The Gardener*. A Book of Brief Directions for the Growing of the Common Fruits, Vegetables, and Flowers in the Garden and about the House. By L. E. Bailey. New York, The Macmillan Company, 1925. All rights reserved. Price 8s. 6d. net.

TREES AND SHRUBS.

SEQUOIA GIGANTEA.

(SUPPLEMENTARY PLATE).

It is indeed unique that the two giant trees of the earth are native to the countries inhabited by the two great English speaking nations; it is also significant that the one is broad-leaved and the other Coniferous, thus practically covering the ornamental and the useful in tree life. Another pleasant consideration is that the Eucalyptus grows as well in California as it does in its native Australia, while the Redwood trees are equally at home in many of the parks and gardens of the British Empire as in its native California.

The chief appeal of the Redwoods to the human imagination is due primarily to the fact that they are not only the largest but the oldest trees now in existence. In the ordinary sense the term Redwood applies to both *Sequoia gigantea* (syn. *S. Washingtoniana*, Sudworth), and to *S. sempervirens*. Claims are made that they attain an age of from 4,000 years to 5,000 years, but most of the average trees now standing, like many that have been felled, are probably 2,000 years to 2,500 years old. According to Sudworth, a recognized authority, their height is from 275 feet to 350 feet, and in exceptional cases 400 feet, with a diameter of from 10 feet to 18 feet, or in rare specimens from 25 feet to 27 feet. Of the two species, *S. gigantea* (Big Tree) is found in scattered areas on the west side of the Sierra range of mountains in California, extending from Southern Placer to Tulare County, at from 5,000 feet to 8,500 feet elevation; the area covered is about fifty square miles. All told there are some twenty-six forests, ranging from large groves to straggling groups. Of these the Giant Forest, situated on marble Fork of the Kaweah river, is the most important, containing about 5,000 trees, the largest, named after General Sherman, being 4,000 years old and 40 feet in diameter at the base. This claims the distinction of being the largest tree in the world. According to Sudworth the habitat of the *S. gigantea* is cooler and drier than that of *S. sempervirens*. At elevations of 7,000 feet the temperature occasionally falls to 12°, and never exceeds 100°. The rainfall varies from 18 inches in dry seasons to 60 inches in wet.

The range of *S. sempervirens* extends from south-western Oregon and along the coastal regions of California so far south as Monterey county. In this belt its presence is far from continuous, being broken up by open glades and groups of other forest trees. It grows no further inland than the fog belt, and is partial to the fertile slopes of the coastal valleys with their heavy rains. Much of the original coastal Redwood area has either been lumbered or destroyed by fire. Where the Redwood forest presents pure growth it is very dense, with little or no undergrowth, except moss and herbage, hence the tall-growing trees with their crowned heads shut out the sun except for brief periods during the day, when shafts of sunshine penetrate here and there, affording effects calculated to fire the enthusiasm of tree lovers and artists. The wood is very durable, withstanding the action of wind and weather for long periods of years, and it is also resistant to decay, and for that reason is greatly used underground. There are a number of governmental reservations of *S. sempervirens* in California.

Chief interest in these fine trees centres, however, on their beauty of form and majestic appearance in park and garden plantings. Where the climate is not severely cold and the rainfall and humidity ample, the Sequoias are, indeed, effective. On the Pacific coast, both *S. gigantea* and *S. sempervirens* are widely used in the beautification of home surroundings, country estates and public parks. The *S. gigantea* shown in the supplementary illustration was

planted in 1884 on the grounds of the California Nursery Company, at Niles, by John Rock who founded the business in 1865. The fine pyramidal habit of growth, the even and well furnished branches and robust development all indicate its adaptability to effective landscape work. This particular tree is about fifty feet high and has a spread of over forty feet in diameter at the base.

An exceptional and somewhat rare form of the Big Tree is *S. gigantea pendula*, known as the Weeping Big Tree. According

sentiments of plant and tree lovers all over the world and emphasises the importance of forest protection and reservation for the enjoyment of future generations:—

"To enter the grove of Redwoods on Bull Creek Flat is to step within the portals of a cathedral, dim, lofty, pillared, peaceful. But this temple which the Great Architect has been building for a score of centuries is incomparably nobler, more beautiful, and more serene than any created by the hands of man. Its nave is loftier than that of Amiens and larger than that of St.

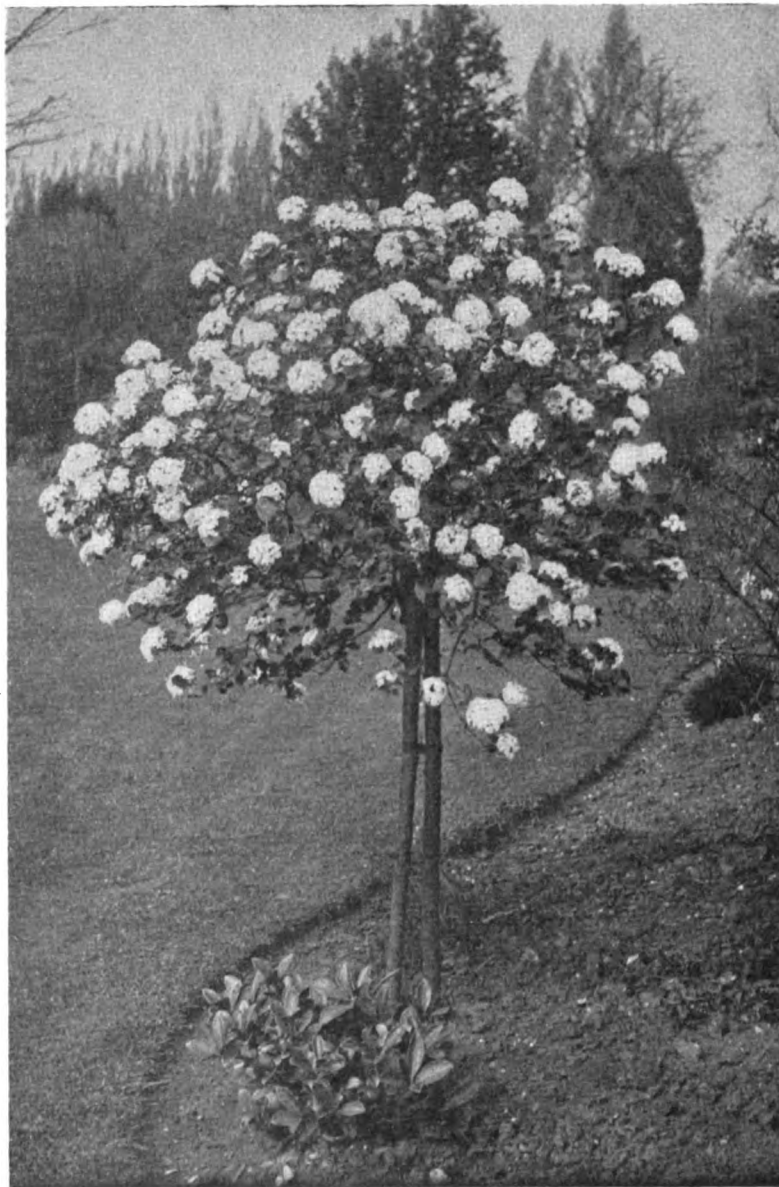


FIG. 42.—VIBURNUM CARLESII.

A half-standard specimen at Aldenham.

to the *Standard Cyclopaedia of Horticulture* it is a horticultural variety said to have come from Europe. The foliage is identical with that of *S. gigantea* but the limbs grow directly downward and adhere closely to the trunk, giving the tree a narrow, columnar-like form, much resembling the Italian Cypress, but less formal. Propagation is by grafting upon normal *S. gigantea*. The illustration shows a tree of this type about twenty-five feet in height growing at Niles.

The following appreciative tribute to the native Redwoods is by Mr. Duncan McDuffie, Councillor of the "Save the Redwoods League," which admirably expresses the

Peter's. Its wine-red shafts, rising clean and straight over two hundred feet, are more numerous than the pillars of Cordova; its floor is carpeted with a green and brown mosaic more intricate than that of St. Mark's; its aisles are lit with a translucence more beautiful than that which filters through the stained glass of Chartres; its spires pierce higher than those of Cologne; its years are greater than those of the first lowly building devoted to Christian service. To destroy this noblest of places of worship would be more irreparable than was the destruction of the Cathedral of Rheims." *Geo. C. Roeding, San Francisco.*

VIBURNUM CARLESII.

I REGARD *Viburnum Carlesii* as the finest member of its genus. The tubular flowers, which open tinged with pink, but later assume a velvety, creamy-white tone, are borne in a rounded cluster, and they are wonderfully fragrant. Although it does not flower so early as *Viburnum fragrans*, it certainly is more constant in our erratic climate, for whereas *V. fragrans* may commence to open its flowers at any odd time in the winter months—with the result that weather affects its beauty so badly that we rarely see anything like its true floral beauty at Aldenham—whereas *V. Carlesii* is more constant, and despite the fact that its buds undergo exposure in winter, the flowers open with unfailing regularity about the end of April and the beginning of May. Further, it is more robust, and late frosts do not appear to hinder flower production.

Grown as a bush, *V. Carlesii* is somewhat ragged or thin in appearance, attaining a height of about four feet to five feet, with a spreading habit, but as the illustration shows (Fig. 42) it makes a delightful half-standard when grafted at a height of three feet, presumably on the accommodating Wayfaring Tree (*V. Lantana*). The specimen shown has a rounded head, three feet or more in depth with a spread of over five feet, and on April 4 last it carried from one-hundred-and-fifty to two-hundred flower heads.

Closely allied to this species, and at one time considered to be an inferior form of it, is *Viburnum bitchuense* from Western Japan, whereas *V. Carlesii* is a native of Corea; but while this is a more sturdy and taller-growing bush (one at Aldenham now measures eight feet tall, with a spread of ten feet), it does not equal *V. Carlesii* in the size of the individual blooms, and the flower clusters are smaller, whilst the fragrance does not quite equal the odour of *Viburnum Carlesii*. *E. Beckett*.

EVERGREEN HEDGES.

NEGLECTED hedges become bare at the base, and quite frequently this is due to the weeds and rubbish which obscure the light and shut out air. Established hedges in gardens will derive benefit from an occasional mulch of manure, and the roots should be thoroughly soaked with water previous to applying the mulch. Where manure cannot always be afforded for this purpose, leaf-mould, decayed vegetable refuse, or old potting soil may be used.

Yew hedges may be clipped at the end of July or early in August; young plants will sometimes produce a few strong growths after this date, especially if the weather is very wet, but these may be removed so that a neat appearance is maintained throughout the winter. During the season of growth light applications of nitrate of soda have been found useful in promoting the growth of Yews in cases where a stimulant seemed necessary, but the nitrate should be given during showery weather, or water must be supplied both before, and after the application.

Old hedges which have become bare at the base are somewhat difficult to treat. It may be advisable to remove the worst specimens and plant new stock, but in such cases fresh soil should be used and care taken that the plants do not suffer through lack of water. Filling in the base of an old hedge with young plants may answer in some cases, but much depends upon the age and width of hedge. A bare place may often be filled by carefully arranging some of the branches to fill it, securing them to stakes—which must be hidden—or to the base of the older branches.

For the sake of appearance Holly hedges are often clipped at the end of the summer, but variegated varieties are best pruned in the spring, and a knife, or the secateurs, should be used for this purpose in preference to the shears. Hedges of Box, and also

Box edging, should be clipped in May, although in the case of established hedges the work is often carried out during late summer.

A very neat hedge is formed by the comparatively new *Lonicera nitida*. Some support may be necessary for the young plants, and this may be provided by a length of galvanised wire supported by stout stakes. The plants quickly become established in good soil, and for forming a low, thin hedge or screen, *L. nitida* is highly satisfactory. Possibly it may be grown to form a tall hedge, but upon this point I have no experience.

Several of the Conifers—*Cupressus*, *Thuya*, and others—when grown as screen or hedge plants, are very effective in suitable positions. Young plants should be kept healthy by attention to watering and mulching, and to keeping them clean at their base. Dead wood at the base is often caused by the growth of grass and weeds. Young plants should be pruned with the knife, or secateurs, but large, established hedges may be clipped with the shears, except in the case of the more tender or choice varieties. *C. Ruse*.

SPARTIUM JUNCEUM.

ONE can imagine the furore that would be caused by the appearance of a yellow-flowered Sweet Pea, and yet the Spanish Broom—likened by Millais, in *Rhododendrons*, to a yellow Sweet Pea—and cultivated in British gardens for well over three hundred years, is not by any means a common shrub. It is essentially a subject for a dry, sunny position, and on a warm July day when the crowded, leafless, whip-like branches are wreathed with golden bloom, its strong, Bean-like fragrance is widespread. In common with other Brooms it is impatient of removal, and requires to be planted in its permanent position when quite young. It grows from six feet to ten feet high, and with age tends to become bare at the base.

There is a double-flowered form much inferior in decorative effect to the type. Indeed, of *S. j. flore pleno* it has been said that it was not worth the golden ducat that Peter Collinson—who introduced it from Nuremberg in 1746—paid for it. *Fred. W. Jeffery*.

THE INFLORESCENCES OF VERONICA.

THE inflorescences of Veronics are variously described in works on plants as racemes, racemose, panicles, or spikes. It is quite obvious, however, that, although in many of them, especially the native species, and possibly also in a number of the herbaceous exotic species, the inflorescences may be simple racemes, in some others, although racemose in their main axes, the inflorescences are much more complicated structures.

This fact my attention was drawn to while examining the inflorescences of *V. salicifolia* this season. I was struck with the remarkable seeming uniformity of the age of the flowers of each inflorescence in this species, those at the apex being fully expanded, while those at the base were still quite fresh, thus adding greatly to their effectiveness; in some other shrubby species the basal flowers were over and the seed vessels swelling, while those at the extremities of the inflorescences were as yet unopened. But I may also state that the comparative uniformity in age of the flowers of each inflorescence in this species is not only much more marked than in other species, but is also distinctly more so in the form of *V. salicifolia* which flowers now and is over in a few weeks than it is in the form which continues until October, seedlings of both of which I have obtained from the same parent plant, and

both of which forms I now have in full flower.

The inflorescence of *V. salicifolia* is, of course, undoubtedly racemose in its main axis, but what the ultimate branches of it are it is somewhat difficult to say, as the successional development of the individual flowers of each ultimate branch would require to be carefully followed out. But there can be little doubt, I think, that the inflorescence is a raceme of cymes of some sort, as we have in many other genera, and that the term "racemose," although in itself indefinite, is probably the only correct definition of it which is given in the books. I may add that in *V. salicifolia*, towards the apex of the inflorescence especially, the groups of cymes, the flowers of which seem to follow a spiral course in their development, appear distinctly in groups, superficially resembling a series of superimposed whorls of flowers, separated from each other by a short length of the main axis, but which appearance, owing to crowding, is much less marked in most of the other species. *A. D. Richardson*.

BULB GARDEN.

LILIUM TESTACEUM.

THIS has long been one of my favourite Lilies, and I am always glad when I see it flourishing and more than usually robust. Therefore, it was with great pleasure that I observed some very fine clumps of this Nankeen Lily in the garden of Captain Stewart, at Shambellie, Newabbey, the other day. I have known *L. testaceum* in the same garden for many years, but as the garden is a dry one, and the season has been more than usually arid, I had not expected it to be so good, particularly in view of Mr. Grove's remark in *Lilies* in the "Present-Day Gardening" series of valuable books. There, Mr. Grove tells us, that "it is not a good plant for a dry place." I have long found, however, that climatic conditions make it impossible to state with confidence that any particular plant likes or dislikes a dry place, and the climate of the south-west of Scotland is more charged with humidity and has a higher rainfall than the south-east of England.

At Shambellie, *L. testaceum* is growing in the mixed border of hardy flowers, and was unusually tall, robust, and healthy-looking, and carried large flowers. It has the benefit of being properly cared for, and the herbaceous borders have been well-manured, so that good results are obtained with most things. I have grown *L. testaceum* myself in very sandy soil, with a subsoil of pure sand and gravel, and excellent plants in the same locality and on similar subsoil were secured in a cottager's garden by lifting the clumps when the Potato-planting season came round, manuring the plot and replanting. This was in March or early April, as a rule. The plants at Shambellie are in a naturally poor, hungry, granite soil. *S. Arnott*.

PUBLIC PARKS AND GARDENS.

THE Bournemouth Corporation has obtained a site at Charminster for a recreation ground.

THE Bootle Town Council has decided to purchase from the Earl of Sefton, for £9,200, about thirty-seven acres on the east side of Captain's Lane, as a site for a public pleasure ground.

THE Urban District Council of Bentley-with-Arksey has received sanction from the Ministry of Health to borrow further sums amounting to £2,145, for pleasure grounds.

INDOOR PLANTS.

COLOURED FREESIAS.

A NOTE on *Lachenalias* reminding me to make out my order at once suggests that the same applies to *Freesias* which should be obtained so soon as possible in August.

After a dull season—we had no sunshine until June—*Freesias* have not ripened so early as usual, therefore, if corms are obtained by mid-August there will be little to grumble about. There should be no attempt to flower the coloured hybrids so early as *F. refracta alba*. They are stronger, and the colours are deeper, if they are grown slowly, and if they flower in April they will give far better results than when flowered in February. A well-known grower of *Freesias* has condemned the practice of covering the pots after the corms are potted, and also the practice of standing the pots out-of-doors. Covering the pots with ashes or fibre tends to encourage a weak and spindly stem. The objection to standing the pots outside appears to be that the water supply cannot be controlled; for instance, if the soil became dry and was watered in the evening, and a heavy rain came on in the night, the *Freesias* would receive more water than they require; if this happens two or three times harm will result. My advice is to house the pots from the start, either in a cold house or a frame. Allow all the air possible, affording water as required. An excess of water is harmful, and if too little is given root action will cease.

For the guidance of those who have not yet tried these coloured varieties, I give what I consider the best of the sorts in commerce; unfortunately, the new variety *Wistaria* will not be available this season. There are other sorts than those I mention, but they are known to me by name only. If yellow is the favourite colour, I would select *Apogee*, if for pots; *Daffodil* for pots and cutting; and if a cheaper one is wanted, either *Buttercup* or *Treasure*. *Golden King* is very useful for cutting, as it flowers long after the others. Its flowers are not ultra-fashionable in form, but they are very strongly scented, and its stiff stems make it a real cut-flower variety. For a pink variety I choose *Conquest*. *Mouette* is a fine upstanding variety, white, shaded with deep pink. *Apotheose* is more massive and deeper in colour, while *Jubilee* is a dwarf and pale edition of *Apotheose*, and a good variety for pot culture. *Dainty*, although an old variety, still keeps expensive, compared with others; possibly it does not increase quickly. It is very free flowering, and its tall, stiff stems make it a grand variety for cutting. The flowers open pale mauve, changing to soft pink and to deep rose as the flowers get older.

Among mauve, blue, and lavender varieties it is sound advice to obtain *Wistaria* when possible; until that time arrives any of the following will serve:—*Merry Widow*, *La France*, *Preciosa*, or the little, old *Bluebeard*, which, although its flowers are small, is one of the richest coloured varieties.

Robinetta is the nearest we have to red colouring, unless *Red Indian* is obtainable; the latter is smaller but of deeper hue.

Eldorado provides one the so-called "art" shades; this variety received an Award of Merit when shown by Messrs. Wallace and Co.; I believe it was raised by Mr. H. Chapman. *La Charmante* is very pretty—a kind of coppery pink, difficult to describe. There are several other sorts which I have tried and discarded as being inferior to those named.

No doubt many readers will remember Mr. Dalrymple's group of mixed, coloured *Freesias* at the R.H.S. Hall, last spring. These were put up to demonstrate the value of *Freesias* as cut flowers. Mr. R. F. Felton, the florist, was most enthusiastic about them, and considered they were the finest subjects he had handled for a long time. I realised their value still more when I saw them used to decorate a dinner table; only yellow

shades were used, and these had been grown and specially selected by Mr. Dalrymple. A huge silver bowl used as a centre piece on a polished mahogany dinner table was filled with these yellow *Freesias*, of every shade of rich and soft yellow, tall stems and short stems, arranged with a little of their own foliage, while four silver vases as corner pieces were filled with a rich orange *Freesia* of unknown name. The whole decoration was very beautiful, either under natural or artificial light, and at the end of a week the flowers were nearly as good as when first arranged. F.

ORCHID NOTES AND CLEANINGS.

ODONTOGLOSSUM ECLIPSE.

A THREE-FLOWERED inflorescence of this superb *Odontoglossum*, and the original drawing of it made when it first flowered as a small seedling three years ago, is sent by Mr. S. Lyne, gardener to J. J. Bolton, Esq., Claygate Lodge, Claygate, Surrey, the home of so many fine *Odontoglossums* and *Odontiodas* which are cultivated there in the highest state of perfection.



FIG. 43.—ECHIUM HYBRIDUM (*E. PININANA* × *E. CALLITHYRSUM*) AT TRESCO ABBEY.

ECHIUMS AT TRESCO ABBEY.

FURTHER to my notes on p. 87, regarding the *Echiums* at Tresco, I now include a photograph of another hybrid (Fig. 43). The inscription and illustration on p. 87 (*E. Pininana* × *E. Wildpretii*) are quite correct, but there is an error in the reference in the fourth paragraph on the page quoted; the figure reference should have been in the succeeding paragraph. The plant now illustrated is a very fine one, indeed I think it the finest of the whole lot. This is my "third plant" whereas Fig. 35 is the "fourth plant." *E. Pininana* × *E. callithyrsum* is a multiple-spiked hybrid and makes a glorious specimen. E. Brown.

This grand novelty, which appears to have been previously unrecorded, was obtained by crossing *Odontoglossum Aglaon* (*eximium* × *Vuykstekeae*) and *O. Thais*, of which the record is not definitely known. The flower of *O. Eclipse* is among the largest of its class and of perfect shape, the sepals and petals being nearly equal in width while the broad lip amply fills in the contour of the flower.

The ground colour is white, the sepals having confluent blotches of ruby-crimson and the petals a central blotch and surrounding band of the same rich colour. The front of the lip is pure white, the base and side lobes blotched with ruby-red. The margins are serrated, white, tinged with rose; the whole flower presents a charming arrangement of colour.

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Editors and Publisher.—Our correspondents would oblige by sending answers to their communications, and save us much time and trouble, if they would kindly observe the notices printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

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Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

VICTORIA REGIA IN THE BOTANIC GARDENS, LENINGRAD.

SOON after the revolution in the spring of 1917 it was decided, for economic reasons, to discontinue the raising of the fine *Victoria regia*, as heating material was extraordinarily scarce and the financial resources of the Botanic Gardens at Leningrad very short.

As the plants of other aquatics, such as *Nymphaeas* and *Nelumbiums*, were still good, we continued to cultivate these with as little expenditure of fuel as possible. However, during the next few troublesome years we had to discontinue their cultivation and closed the Aquatic House to the public during 1918, 1919, 1920 and 1921. As may be imagined, by 1922 the house was in a bad state and needed considerable repair to put it in order again for the tropical water plants. As the famous Palm-house had also to be closed in the autumn of 1917, because of shortage of fuel, the public began to complain and assert that the art of growing these plants in Russia had been lost and that only the spirit of destruction flourished in its place. To assure the public that this was not the case the authorities decided that the staff should show that rare plants could still be cultivated, so a few seeds were procured from Moscow and the Aquatic House renovated and put in order so far as possible by May 1, 1922.

Then my troubles began in earnest. The propagating house, in which was a heated tank for the raising of *Victoria regia* plants, had been closed since 1917, and was in an impossible state of disrepair. Seeds of *Victoria cruziana* var. *Trickeri* came to hand from the Botanical Gardens, Breslau, in early April, and we had no means of raising our seedlings, which under normal conditions we should have commenced at the end of the preceding December or, at latest, in January. After long consideration I decided to construct a kind of incubator which I heated by means of a paraffin lamp and a metal cylinder,

which enabled me to keep the water at a temperature of 22° to 24° R. By these means I succeeded in raising two plants of *Victoria regia* which I planted out in the second half of May and which produced leaves 1.50 m. in diameter and five flowers. We succeeded in supporting a six-year-old girl upon the floating leaves, and I attribute my success largely to the fact that we had a continuation of our famous "white nights" from May 15 until July 15, during which period it was possible to read ordinary newspaper print all through the night and this extra light no doubt helped the plants considerably.

In 1923 I managed to sow seeds of the *Victoria* in December and then, to my regret, was sent by the Ministry of Agriculture to Germany on business, and found

It may be of interest to state that the large tank housed at the same time, besides the two plants *Victoria regia* (raised from seeds obtained from Kew), a plant of *Victoria cruziana* raised from seed obtained from the Botanical Garden at Munich. The latter possesses a much deeper leaf margin but is not so fine in appearance as *V. regia* which also has leaves and flowers that last considerably longer.

As I had managed, in 1915, to create a record by supporting a fifteen-year old boy upon a leaf of *V. regia*, I intended this time to try to float both a boy and a girl upon one of the gigantic leaves, when accident suggested a still better idea. One day, during my absence, one of our working women—who had seen a leaf carry a seventeen-year old boy with the greatest

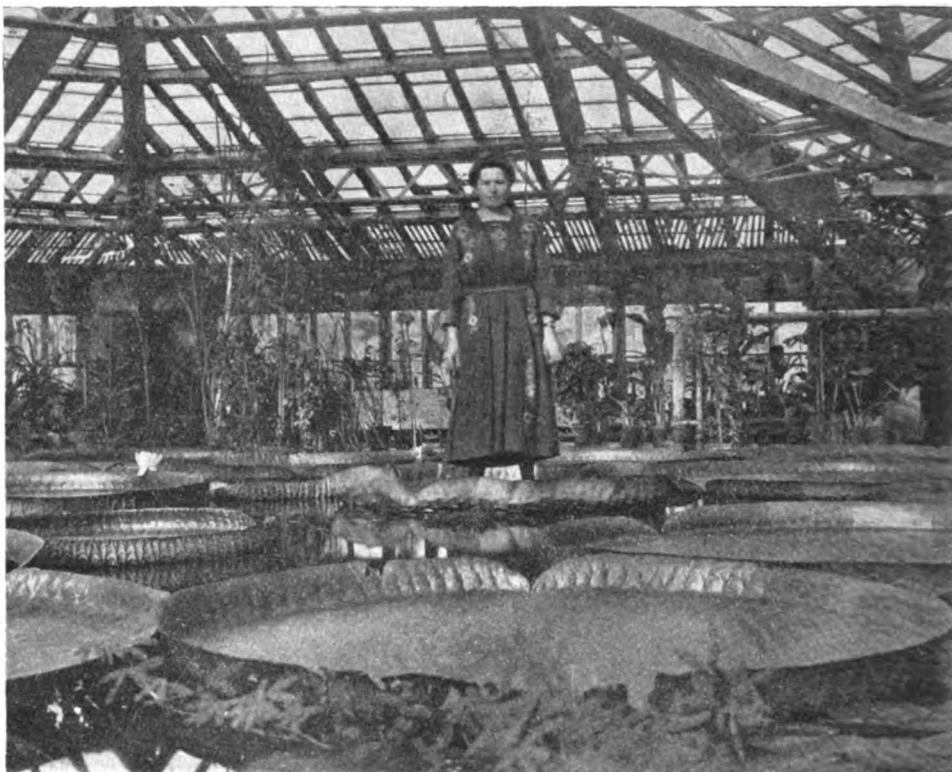


FIG. 44.—VICTORIA REGIA IN THE LENINGRAD BOTANIC GARDENS:
Showing the weight-supporting capacity of a full-grown leaf.

my young plants neglected and ruined upon my return. This obliged me to plant *Euryale ferox* for that season in the place of the desired *Victoria regia*, and the plant produced leaves 1.50 m. across.

However, in 1924, I had better luck and raised the *Victoria regia* in a small tank which was used also for the supply of warm water for watering. As the seedlings grew stronger they were transferred to a larger and deeper tank which was unheated and about two metres from the roof glass. This I managed to heat by means of a small pipe from which hot water dripped from the ordinary heating pipes into the tank and kept the temperature at from 24° to 26° R.

Beautifully bright, sunny weather followed, and the plants grew remarkably well and were transferred to the large, flowering tank, thirteen metres across, in the first half of May. Sunny weather continued and this I regard as half the battle in growing these plants. They grew without a noticeable check and developed leaves fully 1.90 m. across and produced forty-five flowers.

ease—tested a leaf and discovered it would support her weight. I was told of this upon my return and persuaded her to try again in my presence upon the following day, a Sunday, when I would have a camera there and witnesses. She agreed, and I succeeded in getting three good exposures of this feat, one of which I enclose (Fig. 44).

After the photograph had been taken I had the woman weighed and found—including the little wooden shield laid upon the leaf surface to prevent her shoes from breaking through the leaf—she turned the scale at seventy-two kilogrammes. Her name is Alexandra Kalkowska; she is thirty-five years of age and of Polish nationality. I believe this to be a record of the carrying power of the leaves of this plant and I have eye-witnesses ready to prove the correctness of my assertion, I should like to add that the woman's attempt was made out of sheer curiosity and to prove the correctness of travellers in the Amazonian region. *Carl Meissner*, Curator, Botanic Garden, University of Kowno, Lithuania (late Curator of the Botanic Gardens, Leningrad, Russia).

REPORT ON THE CONDITION OF THE OUT-DOOR FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS.]

THE WORDS "AVERAGE," "OVER," OR "UNDER," AS THE CASE MAY BE, INDICATE THE AMOUNT OF THE CROP;
AND "GOOD," "VERY GOOD," OR "BAD," DENOTE THE QUALITY.

FULLER COMMENTS WILL BE GIVEN IN THE FOLLOWING NUMBERS. SEE ALSO LEADING ARTICLE ON PAGE 101

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND										
Scotland, N.										
MORAYSHIRE	Under; good	Under; bad	Under; good	Average; good	Under; good	Average; good	Under; good	Average; good	.....	John Macpherson, 4, Haw thorn Road, Elgin.
ROSS SHIRE	Average; good	Under; bad	Average; good	Under; bad	.....	.....	Over; very good	Average; good	.....	John Melrose, Ardrross Castle Gardens, Ainess.
SUTHERLANDSHIRE	Average	Average	Over	Under	.....	.....	.....	Under	.....	W. F. Game, Dunrobin Gar- dens, Golspie.
Scotland, S.E.										
BERWICKSHIRE	Under; good	Under; bad	Under	Average	Average; good	Average	Average; very good	Average; good	.....	W. J. Clayton, Milne Graden Gardens, Coldstream.
PEEBLESHIRE	Under; good	Under; bad	Average; good	Under	.....	.....	Over; good	Over; very good	.....	John Fenn'e, Stobo Castle Gardens, Stobo.
Scotland, E.										
ABERDEENSHIRE	Under	Average	Under	Under	.....	.....	Average	Average	.....	Simon Campbell, Fyvie Castle Gardens, Fyvie.
	Under; bad	Under; bad	Under; bad	Under; bad	.....	.....	Average; good	Under; good	.....	James Grant, Rothlenorman Gardens.
BANFFSHIRE	Average; good	Under	Over; good	Average; good	.....	.....	Over; very good	Over; very good	.....	George Edwards, Ballindalloch Castle Gardens.
FIFESHIRE	Under	Under	Under	Average	.....	Under	Average	Over; good	.....	Chas. Simpson, Wemyss Castle Gardens, East Wemyss.
	Under	Under	Under	Under	Under	Under	Average; good	Average; good	.....	D. McLean, Raith Gardens, Kirkcaldy.
	Under; good	Under	Average; very good	Average good	.....	.....	Average; very good	Average; good	.....	David Milne, Balbirnie Gar- dens, Markinch.
FORFARSHIRE	Under	.....	Under	Under	.....	.....	Under	Average; good	.....	Donald McInnes, Glamis Castle Gardens.
	Under	Under	Under	Under; good	.....	.....	Average; good	Over; good	.....	Robert Bell, Kinnaird Castle Gardens, Brechin.
	Under; good	Under; good	Under; good	Average; good	.....	.....	Under; good	Average; good	.....	David Boyle, Tay Park Gar- dens, Broughty Ferry.
	Average	Under	Average; good	Under	.....	.....	Over; very good	Average; good	.....	J. P. Peffers, Panmure Gar- dens, Carnoustie.
KINCARDINESHIRE	Under	Under	Over.	Average good	.....	.....	Average	Over; very good	.....	William Thomson, Ury House Gardens, Stonehaven.
MIDLOTHIAN	Under	Under	Average	Average	Average	Under	Average	Over	.....	W. Crighton, Morton Hall Gar- dens, Liberton, Edinburgh.
PERTHSHIRE	Under	Under	Average	Average; very good	Average; good	.....	Over; good	Over; very good	.....	James Tunstall, Keir Gardens, Dunblane.
	Under	Under	Average	Under	Average	Under	Over	Over	.....	Chas. Crighton, Jordanstone Gardens, Meigle.
	Under	Under	Under	Average	Under	Under	Over	Over	Average	Malcolm Macnaughton, Seone Palace Gardens.
	Under; very good	Under; good	Average; good	Average; good	Under; good	Under; bad	Over; very good	Over; very good	.....	James McGregor, Rossie Priory Gardens, Inchture.
STIRLINGSHIRE	Under	Under	Under	Average; good	.....	.....	Over; very good	Average	Under	James D. Cunningham, Dun- treath Castle Gardens, Blane- field.
Scotland, W.										
ARGYLLSHIRE	Under; bad	Under; bad	Under	Average; good	Under	.....	Average; good	Average; good	.....	D. S. Melville, Poltalloch Gar- dens, Kilmartin.
AYRSHIRE	Under; good	Under; good	Average; good	Average; good	Over; very good	Under; bad	Average; very good	Over; very good	Average; good	D. Buchanan, Bargany Gar- dens, Dailly.
BUTESHIRE	Under; bad	Under; bad	Under; good	.....	Average; good	.....	Average; good	Average; good	.....	J. Davidson, Ardencraig Gar- dens, Rothesay.
DUMBARTONSHIRE	Under	Under; good	Under	Average	.....	.....	Average; good	Average; good	.....	John Brown, Cairndhu Gar- dens, Helensburgh.
DUMFRIESSHIRE	Under; good	Under; bad	Under; bad	Under	.....	.....	Over; good	Under; good	.....	James McDonald, Dryfeholm Gardens, Lockerbie.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARIES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
ENGLAND										
England, N.E.										
DURHAM	Under	Under	.....	Under	Under	.....	Average	Average	.....	Edward Tindale, Ravensworth Gardens, Gateshead.
	Under; bad	Under; bad	Average; good	Over; very good	Under; bad	.....	Average; good	Over; good	.....	J. A. Woods, Beamish Park Gardens, Beamish, S.O.
NORTHUMBERLAND ..	Under; bad	Under; bad	Under; bad	Average; good	.....	Over; good	Average; good	Under; good	.....	William McComble, Newton Hall Gardens, Stocksfield-on-Tyne.
	Under; bad	Under; bad	Under; good	.....	.....	.....	Over; good	Over; very good	Average; good	James Winder, Howden Dene Gardens, Corbridge-on-Tyne.
YORKSHIRE	Under	Under	.....	Average	.....	.....	Average	Average	.....	E. Knowles, The Hogg Gardens, Mirfield.
	Under; good	Under; bad	Under; good	Average; good	Under; good	Under; good	Over; very good	Over; very good	Under; bad	J. S. Coates, Dalton Hall Gardens, Beverley.
	Under; good	Under; good	Under; good	Under; good	.....	Under; bad	Average; good	Average; good	Under	Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.
	Under; bad	Under; bad	Under; bad	Under; bad	.....	.....	Average; good	Average; good	.....	A. Dryden, Field House Gardens, Triangle, Halifax.
	Under	Under; bad	Under	Under	.....	Under	Average; good	Average; good	.....	J. G. Wilson, New Millerdam Wakefield.
England, E.										
CAMBRIDGESHIRE	Average; good	Under; good	Under; good	Average; good	Under; good	Under; good	Over; good	Average; very good	Under; good	Arthur Sewell, 42, Barton Road, Ely.
	Over; very good	Under; bad	Average; very good	Average; good	Under; bad	.....	Over; very good	Over; very good	.....	T. Spooner, "Whitecroft," Meldreth, Royston.
ESSEX	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Over; very good	Under	.....	Arthur Bullock, Copped Hall Gardens, Epping.
	Average; good	Under; bad	Under	Average	Average; good	Under	Average; good	Average; good	Under	C. A. Heath, Great Hallingbury Bishops, Stortford.
	Average; good	Under; bad	Under; bad	Under; bad	Average; bad	Under; bad	Average; good	Average; good	Under; bad	C. Wakely, East Anglian Institute, Chelmsford.
HUNTINGDONSHIRE ..	Average	Under	Average	Average	Under	Under	Average	Average	Average	James Hewitt, Castle Gardens Kimbolton.
	Under; good	Under; bad	Under; bad	Average	Under; good	Average; good	Over; very good	Over; very good	Under	Guy S. Aubertin, Conington Castle Gardens, Peterborough.
	Average	Under	Under	Average	Average	Under	Average	Under	Under	A. V. Coombe, Ramsey Abbey Gardens.
LINCOLNSHIRE	Under	Under	Under	Under	.....	Under	Average; good	Average; good	Under	Thomas Cox, Hainton Hall Gardens, Lincoln.
	Average	Under	Under	Under	Average	Under	Average; good	Average; good	Under	F. J. Foster, Grimsthorpe Castle Gardens, Bourne.
	Under	Under	Under	Average	Average	Under	Average; good	Average; good	.....	J. F. Vinden, Harlaxton Manor Gardens, Grantham.
NORFOLK	Under; good	Under; bad	Under; bad	Under; good	Average; good	Under; good	Average; good	Over; good	Under; bad	C. G. Nichols, The Manor House Gardens, Gt. Ormesby Gt. Yarmouth.
	Average; good	Under	Average; very good	Average; good	Under	Under	Over; good	Average; very good	Under; good	J. E. Fitt, Breeches Hall Gardens, Attleborough.
	Average; good	Under	Under	Under	.....	.....	Over; good	Average; good	Under	Isaiah Johnson, Catton House Gardens, Norwich.
SUFFOLK	Under	Under	Under	Average	Average; good	.....	Average; good	Under	Under	Arthur E. Sales, Flixton Hall Gardens, Bungay.
	Average	Under	Under	Average	.....	.....	Average	Under	.....	E. G. Creek, County Horticultural Instructor, Abbey Run House, Bury St. Edmunds.
	Under; good	Under; bad	Under; good	Under; good	.....	Under; good	Average; good	Average; good	.....	H. Coster, Ickworth Gardens, Bury St. Edmunds.
Midland Counties.										
BEDFORDSHIRE	Average	Under; bad	Under	Average	Under	Under	Over; good	Over; very good	Under	W. G. Warner, Chicksands Priory Gardens, Bedford.
	Average; very good	Under; good	Under; bad	Under; bad	Average; good	.....	Average; good	Under; bad	Under; good	Chas. Turner, Amphill Park Gardens, Amphill.
BUCKS	Under; bad	Under; bad	Under; bad	Average; good	Under; good	Under; good	Average; bad	Under; bad	Average	W. Hedley Warren, Sunnymead, London Road, Buckland, Aylesbury.
	Average	Under; bad	Under; bad	Under; bad	Under; good	Under; bad	Average; good	Under; bad	Under	James Wood, Heddon Park Gardens, Bourne End.

CONDITION OF THE FRUIT CROPS--(continued.)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
BUCKS (Continued)	Under; bad	Under; bad	Under; bad	Under; good	Under	.....	Average; good	Average; good	Under	William Brooks, Abbey Gar- dens, Great Missenden.
	Under	Under	Under	Under	Under	Under	Average	Under	Under	Philip Mann, Education Sub- Office, Aylesbury.
	Average; good	Under; bad	Under; good	Average; good	Average; good	Under; bad	Over; good	Average; good	Under	F. Reid, Dropmore Gardens Maidenhead.
	Average; good	Under	Under	Average; good	Average	Under	Average; under	Average; good	Average	Wm. Turnham, Greenlands, Gardens, Henley-on-Thames.
CHESHIRE	Under	Under	Under	Average	Under	Under	Average; very good	Over; very good	.....	T. A. Summerfield, Alderley Park Gardens, Chelford.
	Under; bad	Under; bad	Average; very good	.....	.....	.....	Under; good	Under; good	.....	Alfred N. Jones, Marbury Hall Gardens, Northwich.
	Under	Under	Under	Average	Average	Under	Over; good	Average	Under	Jas. Atkinson, Torkington Lodge Gardens, near Stock- port.
DERBYSHIRE	Under	Under	Under	.....	.....	.....	Average	Under; bad	Under	E. Wilson, Hardwick Hall Gardens, Chesterfield.
	Under; good	Under	Under; bad	Under; bad	.....	Under	Average; good	Average; very good	.....	John Maxfield, Darley Abbey Gardens, Derby.
	Under; good	Under; bad	Under; good	Over; good	.....	.....	Average; very good	Over; very good	.....	J. Tully, Osmaston Manor Gardens, Ashbourne.
HERTFORDSHIRE	Average; good	Under; bad	Under; bad	Average; good	Under; bad	Under	Under; bad	Under; bad	Average	G. H. Hill, Caldecote Gardens, Bushey Heath, nr. Watford.
	Over; good	Under; bad	Under; good	Average; good	Average; good	Under	Over; good	Average; good	Under	Edwin Beckett, Aldenham House Gardens, Elstree.
	Over	Under; good	Average	Average	Under	.....	Average; very good	Over	.....	T. Pateman, Brockett Hall Gar- dens, Hatfield.
	Average; good	Under; good	Under; good	Under; good	Average; good	.....	Over; very good	Average; good	Average; good	A. J. Hartless, King's Walden Bury Gardens, Hitchin.
LEICESTERSHIRE	Under	.....	.....	.....	Under	.....	Average	Average; good	.....	W. Coe, Prestwold Gardens, Loughborough.
	Under	Under	Under	Average	Under	Under	Average	Average	Under	F. Ibbotson, Rolleston Hall Gardens, Billisdon.
	Average; very good	Under; very good	Under; very good	Over; good	.....	.....	Over; very good	Under; bad	Under; bad	Wm. Paterson, Swithland Hall Gardens, Loughborough.
NORTHAMPTONSHIRE	Under; good	Under; bad	Average; good	Average; good	.....	.....	Average; very good	Over; good	Average; good	Alfred Child, Catesby House Gardens, nr. Daventry.
	Average; good	Under; bad	Under; bad	Under; bad	Under; good	Under; bad	Over; very good	Average; good	Under; bad	F. W. Gallop, Lilford Hall Gardens, nr. Peterborough.
	Average; good	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Over; very good	Average; good	Under; bad	Arthur R. Searle, Castle Ashby Gardens, Northampton.
NOTTINGHAMSHIRE	Over	Under	Under	Average	Under	Under	Average	Average	Average	S. Barker, Clumber Gardens Worksop.
OXFORDSHIRE	Under; very good	Under; bad	Under; bad	Under; very good	Under; bad	Under; bad	Average; very good	Over; good	.....	T. W. Whiting, Shotover Park Gardens, Wheatley.
	Under; good	Under; bad	Under; good	Under	Average	Under	Over; good	Under	Average	Ben Campbell, Cornbury Park Gardens, Charlbury.
	Average; good	Under	Under; good	Average; good	Average; good	Under	Over; very good	Average; very good	Under	B. Elkington, Wardington Lodge Gardens, Banbury.
	Average; very good	Average; bad	Average; very good	Average; bad	Average; bad	.....	Average; very good	Average; very good	.....	Victor R. S. Gammon, Eyn- sham Hall Gardens, Witney
STAFFORDSHIRE	Under; bad	Under; bad	Average	Under; bad	.....	.....	Average good	Under; bad	Under; bad	John W. Miskin, Woodseat Gardens, Rocester.
	Under; bad	Under; bad	Under; bad	Under; bad	.....	Under; bad	Average; good	Average good	Under; bad	E. Bannerman, Blithfield Hall Gardens, Admaston.
	Under	Under	Under	Average	Under	Under	Average	Average	Average	E. T. Gilman, Hill-side Rugeley.
	Average; good	Under	Under; bad	Average; bad	Average; good	.....	Average; good	Over; very good	.....	T. G. Cheney, Westmere Gar- dens, Shenstone, nr. Lichfield.
	Under	Under	Under	Under	Under	.....	Average; good	Under	.....	Herbert Cragg, Aldershaw Gar- dens, Lichfield.

CONDITION OF THE FRUIT CROPS—(continued.)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS.
WARWICK	Under	Under	Under	Under	Under	.....	Average; good	Under	Under	Burton Gaiger, Wellesbourne House Gardens, Warwick
	Average good	Under; good	Under; good	Under; bad	Under; good	Under; good	Average; good	Average; bad	Under; good	H. Dunkin, 86, Emscote Road, Warwick.
	Under; good	Under; bad	Under; good	Average; good	Average; good	Under	Over; good	Average; good	Under	W. Harmon, Newnham Paddox Gardens, Rugby.
England, S.	Under	Under; bad	Under; bad	Under; bad	Under; bad	Under	Average; good	Average; good	Under	H. F. Sinal, Warwick Castle Gardens, Warwick.
BERKSHIRE	Average; good	.....	Under	.....	.....	.....	Over; good	Average	Average; good	J. A. Hall, The Grange Gar- dens, Sutton Court-nay.
	Under	Under; bad	Average	Average	Average; good	Average	Over; Average	Under	Under	J. Howard, Benham Park Gardens, Newbury.
	Average; good	Under	Average good	Average; good	Under	Under	Average; good	Under	Under	A. B. Wadds, Engelfield Gar- dens, Reading.
	Average; good.	Under; bad	Under; good	Under; bad	Under	Under	Average; good	Under; bad	Under	Henry Butcher, Wyld Court Gardens, Hampstead Norris, Newbury.
	Average; good	Under; bad	Under; bad	Average; good	Average; good	Average; good	Over; good	Average; good	Average; good	Geoffrey Cooper, Ranworth, Malvern Road, Furze Platt, Maidenhead.
	Average	Under	Under	Average	Average	Under	Average; good	Under	Under	Thomas Wilson, Castle Gar- dens, Wallingford.
DORSETSHIRE.....	Under; good	Under; bad	Under; good	Under; bad	Average; good	Under	Average; good	Under; good	Under	Thos. Denny, Down House Gardens, Blandford.
	Average good	Under; bad	Under; good	Under; good	Average; good	.....	Under; bad	Under; good	Average; good	W. E. Axford, St. Giles Gar- dens, Salisbury.
HAMPSHIRE	Average; good	Under	Average; good	Average; good	Under	Under	Over; very good	Under; bad	Under	A. J. Legge, Dogmersfield Park Gardens, Winchester, Basingstoke.
	Under; Average	Under; Average bad	Under; Average	Under; Average	Under; Average	.....	Average	Average	Under	F. Gooch, Bossington House Gardens, Houghton, Stock- bridge.
	Average; good	Under; bad	Average; good	Average; good	Under	.....	Over	Average	.....	W. G. Osborne, Sutton Manor Gardens, Sutton Scotney.
KENT	Average	Under	Under	Under	.....	.....	Under	Average	Under	Geo. Lockyer, Mereworth Gar- dens, Maidstone.
	Over; good	Under; bad	Under; bad	Average; good	Under	.....	Average; good	Under; bad	Under	E. A. Bunyard, Allington, Maidstone.
	Over	Under	Average	.....	.....	.....	Average	Under	.....	Chas. E. Shea, The Elms, Foots Cray.
	Under	Under	Under	Under	Under	Under	Average	Under	.....	J. T. Shann, Betteshanger Park Gardens, Eastry, Deal.
	Average; good	Under; bad	Under; bad	Average; good	Average; good	Average; good	Average; good	Average; good	Average; good	James Mayne, 32, Wigtown Road, Eltham, S.E. 9.
MIDDLESEX	Average; good	Under	Under	Average	Average	.....	Average	Under	Under	H. Markham, Wrotham Park Gardens, Barnet.
	Average	Under; bad	Under; bad	Under	.....	.....	Average	Average	.....	James A. Paice, Sunnysfield, Gardens, Mill Hill.
	Average; good	Under; bad	Under; bad	Average; good	.....	Under	Average; good	Under; bad	.....	G. H. Head, Fulwell Park Gardens, Twickenham.
SURREY.....	Average; very good	Under	Average; good	Average; very good	Under; good	.....	Over; very good	Average	Under; good	James T. Weston, Hatchford End Gardens, Cobham.
	Over; good	Under; bad	Under; bad	Average; good	Under; bad	Under; bad	Over; very good	Over; good	.....	Will Tayler, Peace, Ashted Lane, Godalming.
	Average; good	Under	Under	Average; good	Under	Under	Average; good	Under; bad	Under; good	F. Jordan, Ford Manor Gar- dens, Lingfield.
	Average; good	Under	Under	Average; good	Under; good	.....	Over; good	Under	Average; good	Allan N. Rawes, R.H.S. Gar- dens, Wisley, Ripley.
	Average; good	Under; good	Under; bad	Under; bad	.....	.....	Over; very good	Over; very good	Under; good	H. Prince, Polesden Lacey Gardens, Dorking.
SUSSEX	Average; bad	Under; bad	Under; good	Under; good	.....	.....	Average	Under; bad	Under	E. M. Bear, Magham Down, Hallsham.
	Under	Under	Under	Under	.....	.....	Over	Average	Under	Leon Squibbs, Stonehurst Gar- dens, Ardingly.
	Average	Under; bad	Under	Average	Average	Under	Average; good	Average; good	Under	A. Wilson, Eridge Castle Gardens, Tunbridge Wells.
	Under	Under	Under	Average	Under	.....	Over; good	Under	Average	E. Markham, Gravetye Manor Gardens, East Grin- stead.
	Average; good	Under; bad	Under; bad	Under	Under	.....	Average; good	Under; bad	.....	W. H. Smith, West Dean Park Gardens, Chichester.
	Average; good	Under	Average; good	Average; good	Under	.....	Over; Average	Average; good	Average	E. Neal, Tilgate Gardens, Crawley.

CONDITION OF THE FRUIT CROPS—(continued).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NEC- TARINES.	APRICOTS.	SMALL FRUITS.	STRAW- BERRIES.	NUTS.	NAME AND ADDRESS
WILTSHIRE	Average; good	Under;	Average; good	Over; good	Under; good	Under	Average; good	Average; good	Under	H. H. Mills, Fontill House Gardens, Tisbury.
England, N.W.	Average; good	Under	Under	Average	Under	.....	Average; good	Under	Under	J. Yandell, Manor Gardens Ramsbury.
CUMBERLAND	Under; bad	Under; bad	Under; bad	Under; bad	.....	Under	Under; bad	Under; bad	.....	J. Service, Holme Hill Gardens, Dalston, R.S.O., Carlisle.
WESTMORELAND	Under	Under	Under	Under	Average; good	.....	Average; good	Average; good	.....	Robert Dacre, Underley Gardens, Kirkby Lonsdale.
England, S.W.	Average	Under	Under	Under	Average	.....	Average	Over	.....	James Jeffrey, Lowther Castle Gardens, nr. Penrith.
CORNWALL	Under; good	Under; good	Under; bad	Average; good	Under; good	.....	Over; very good	Average; very good	.....	Harry Williams, Tolvean Gardens, Redruth.
DEVONSHIRE	Under; good	Under; good	Under; bad	Average; good	Under; good	Average; good	Over; good	Over; good	Under; good	E. E. Bristow, Castle Hill Gardens, Filleigh, Barnstaple.
	Under	Under	Under	Under	Under	.....	Average; good	Average; good	.....	Gilbert Sleep, Hartland Abbey Gardens, Hartland.
	Average	Under	Under	Under	Under	Under	Average	Under	Under	P. C. M. Veitch, Royal Nurseries, Exeter.
SOMERSET	Under; good	Under; bad	Under; good	Average; good	Average; good	Under; bad	Average; very good	Average; good	Average; good	James Glasheen, Bestercombe Gardens, Taunton.
	Average; good	Under; good	Average; good	Over; good	Average; good	Average; good	Average; good	Under; good	Over	Grigor Roy, Halswell Park Gardens, Gouthurst, Bridgewater.
GLOUCESTERSHIRE	Under; good	Under; bad	Under; good	Under; good	Under	.....	Average; very good	Average; very good	.....	F. J. Clark, Westonbir Gardens, Tetbury.
	Under; very good	Under; good	Average; good	Average; very good	Under; good	.....	Over; very good	Over; very good	.....	John Ette, 201, Henleaze Road, Westbury-on-Trym, Bristol.
	Average; very good	Under	Average; good	Average; very good	Under	.....	Over; very good	Average; good	Average	A. W. Pearce, Sudeley Castle Gardens, Winchcombe.
	Under	Under	Under	Average; good	.....	.....	Average; good	Average; good	.....	Wm. J. Jefferies, Cirencester.
	Under	Under	Under	Under; good	Average; good	.....	Average; good	Average; good	Under	John Banting, Tortworth Gardens, Falfield.
	Under; good	Under; good	Under; good	Under; good	.....	.....	Average good	Under; good	Average good	G. H. Hollingworth, Shire Hall, Gloucester.
HEREFORDSHIRE	Under; good	Under; bad	Under; good	Average; good	Average; good	Average; good	Average; good	Average; good	Under; good	Geo. H. Emmett, Hampton Court Gardens, Leominster.
	Under; very good	Under	Under; bad	Average; good	Under	Under	Average; very good	Under	Under; bad	F. Roberts, Stoke Edith Park Gardens, Hereford.
SHROPSHIRE	Average; very good	Under; good	Under; good	Average; very good	Under	Under; very good	Over; good	Under; good	Under	Roger F. Jones, Oteley Hall Gardens, Ellesmere.
	Under; good	Under; good	Under; bad	Under; good	Under; bad	.....	Average; good	Under; good	Under	E. F. Hazelton, Yeaton Pevery Gardens, Bomere Heath, Shrewsbury.
WORCESTERSHIRE	Under; good	Under; bad	Under; bad	Average; good	Under; bad	Average; good	Average; good	Under; small	Under; bad	William Crump, V.M.H., Oakridge, Malvern Link.
	Average	Under	Average	Under	Under	Under	Under	Under	Under	Alfred Edney, Hill Crest Gardens, Evesham.
	Under	Under	Average	Average	.....	.....	Average; good	Under	Under	Ernest Avery, Finstall Park Gardens, Bromsgrove.
	Under; good	Under; bad	Under; bad	Under	.....	Under; good	Average good	Under	Under	C. A. Bayford, Davenham Gardens, Malvern.
WALES										
CARDIGANSIRE	Under	Under	Average	Under	Average; very good	.....	Over; very good	Over; very good	.....	W. Phillips, Derry Ormond Gardens, Llanybi.
	Under; good	Under; good	Under; good	Average; good	.....	.....	Average; very good	Average; good	Under; bad	D. H. Dunn, Hafod Gardens, Pontrhydygroes, Ystrad Meurig.
CARNARVONSHIRE	Under; good	Under; bad	Under; good	Average; good	.....	.....	Average; good	Under; good	.....	J. S. Higgins, Glynllivon Gardens, Llanwnda.
DENBIGHSHIRE	Under; very good	Under; good	Under	Average; very good	Under	Average; very good	Over; very good	Average; good	Under	R. H. Crockford, Horsley Hall Gardens, Gresford, nr. Wrexham.
	Under	Under	Under	Average	.....	Under	Average; good	Over; good	.....	J. A. Jones, Chirk Castle Gardens, Chirk, nr. Wrexham.
	Average	Under	Under	Average	Under	.....	Average	Average	.....	F. C. Puddle, Bodnant Gardens, Talycafn.

CONDITION OF THE FRUIT CROPS—(continued.)

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAW-BERRIES.	NUTS.	NAME AND ADDRESS.
GLAMORGANSHIRE	Average; good	Under; good	Average; good	Under; bad	Under; good	.....	Average; good	Average; very good	Under	W. E. Wright, Henstaff Court Gardens, Pontyclun.
IRELAND	Under	Under	Under	Average	Under	.....	Over	Under	.....	C. T. Warmington, Penllergaer Gardens, Swansea.
Ireland, N.										
MEATH	Under	Under	Under	Under	.....	.....	Average	Average	.....	Michael McKeown, Julians-town, Drogheda.
TYRONE	Under; bad	Under	Under	Average	.....	.....	Average; good	Average; very good	.....	Fred. W. Walker, Sion House Gardens, Sion Mills.
WESTMEATH	Under; good	Under; bad	Under; good	Average; good	.....	Under; bad	Average; very good	Under; very good	Under; bad	Wm. Allan, Pakenham Hall Gardens, Castlepollard.
Ireland, N.E.										
DOWN	Under; bad	Average; good	Over; very good	Under; good	.....	Average; good	Average; very good	Over; very good	.....	T. W. Bolas, Mount Stewart Gardens, Newtownards.
Ireland, S.										
CORK	Under; good	Under; good	Under; good	.....	.....	.....	Average; good	Average; good	.....	J. Dearnaby, 17, St. Patrick's Terrace, Magazine Road.
KILDARE	Under	Under	Under	Under	Under	Under	Over	Under	Under	Alexander Black, Carlton Gardens, Maynooth.
KILKENNY	Under	Under	Under	Under	.....	Under	Average	Average	.....	Henry Hall, Shankill Castle Gardens, Whitehall.
CHANNEL ISLANDS	Under; good	Under; good	Under; good	Average; good	Average; good	Average; good	Average; good	Average; very good	Under; good	T. E. Tomalin, Bessborough Gardens, Piltown.
GUERNSEY	Average; good	Under; good	Under	Under	Under	Under	Average; good	Under	.....	C. Smith and Son, Caledonia Nursery, Guernsey.
	Average	Under	Under	Under	.....	.....	Over	Under	.....	W. Mauger and Sons, Brookdale Nurseries.
JERSEY	Over; good	Under; bad	Under; good	Over; good	Under; good	.....	Average; good	Average; good	.....	Jas. Harper, Springfield Nursery, St. Heliers.
ISLE OF MAN										
DOUGLAS	Under; bad	Under; bad	Under; bad	Under	.....	.....	Average	Average; good	.....	James Inglis, Peel Road Nursery, Douglas.

SUMMARIES OF THE HARDY FRUIT CROPS

SCOTLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	27	26	27	26	11	9	27	27	3
Average	4	2	3	15	5	1	14	13	2
Over	—	—	3	—	1	—	10	11	—
Under	23	24	15	11	5	7	3	3	1

ENGLAND.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	119	117	116	113	88	65	119	119	83
Average	52	1	22	60	34	10	77	55	20
Over	7	—	—	5	—	1	36	18	1
Under	60	116	94	48	54	54	6	46	62

WALES.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	8	8	8	8	5	2	8	8	3
Average	2	—	2	6	1	—	5	4	—
Over	—	—	—	—	—	—	3	2	—
Under	6	8	6	2	4	1	—	2	3

GRAND SUMMARY, 1925.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	195	163	163	158	108	82	166	166	93
Average	60	4	33	84	41	15	106	79	23
Over	8	—	4	6	1	1	51	32	1
Under	98	159	126	68	66	66	9	55	69

IRELAND

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	8	8	8	7	2	5	8	8	3
Average	—	1	—	3	1	2	7	5	—
Over	—	—	1	—	—	—	1	1	—
Under	8	7	—	4	1	3	—	2	3

CHANNEL ISLANDS.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	3	3	3	3	2	1	3	3	—
Average	—	—	—	—	—	—	2	1	—
Over	—	—	—	—	—	—	1	—	—
Under	—	3	3	2	2	1	—	2	—

ISLE OF MAN.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	1	1	1	1	—	—	1	1	1
Average	—	—	—	—	—	—	1	1	1
Over	—	—	—	—	—	—	—	—	—
Under	1	1	1	1	—	—	—	—	—

SUMMARY OF 1924 FOR COMPARISON.

Records.	Apples.	Pears.	Plums.	Cherries.	Peaches and Nectarines.	Apricots.	Small Fruits.	Strawberries.	Nuts.
Number of Records	179	177	176	170	119	90	179	179	97
Average	75	77	26	83	67	18	95	97	46
Over	14	35	1	27	23	1	78	56	10
Under	90	65	149	60	29	71	6	26	41

VEGETABLE GARDEN.

VEGETABLE SEEDS FOR AUGUST SOWING.

EXCEPT for the spring, when re-awakening Nature invites us to sow and plant, probably no month is more important than August for the sowing of vegetable seeds, indeed the maintenance of supplies during a considerable portion of the year depends a good deal on seeds sown this month.

Although most growers make a small sowing of Cabbage in late July, the main sowing is usually made in August and it is always wise to make two sowings of two or three varieties; from this later sowing some plants may be lifted to withstand the winter, when they will be found useful to plant up as successional beds to those planted in the autumn.

Cauliflowers for early summer use may be sown about the middle or towards the end of the month on very light, warm soils, and Brussels Sprouts for early autumn use about the second week.

On light, sandy soils where it is extremely difficult to obtain good crops of Onions from spring sown seeds the August sowing should be made the main-crop. The Tripoli section still appears to enjoy pre-eminence for sowing at this season, but many of the varieties which are usually sown in the spring are equally well adapted for sowing in August and they should be sown as well as the Tripolis. The result will be heavier crops and earlier ripening with a consequent enhancing of the keeping qualities of the bulbs grown.

Spinach may be sown at any time during the month, as ground becomes available, and the crop will be very useful for maintaining supplies during late autumn. A large sowing should be made at the end of the month to withstand the winter and come in for early spring use. On sandy soils, which are so suitable for the production of good, clean roots of Carrots, late sowings almost invariably give better results than earlier ones and it is not unusual for excellent and heavy crops to be taken from sowings made in June and early July. During the present season, however, it was almost impossible to effect germination during this period owing to the prolonged drought and where supplies are short, sowings should be made now wherever ground is available. Small Carrots are always in demand and present sowings will yield roots of serviceable size which will be much more appreciated than the larger, riper roots from the stone heap.

Turnips may also be sown at any time during the month to provide a supply of succulent roots during autumn and winter.

Lettuces should be raised to withstand the winter, choosing such hardy varieties as Bath Cos, Hick's Winter White, Commodore Nutt and all the Year Round. Where forcing accommodation is limited these Lettuces will be appreciated early in the year before the spring sown batches become available. The final sowing of Endive should also be made about the middle of the month.

Corn Salad is an extremely useful salad during winter and spring and successional sowings should be made during August, those made early in the month giving supplies during October and winter while those made at the end of the month will provide useful material in early spring. *W. Auton.*

ONIONS.

PREPARATIONS should now be made for sowing autumn Onions to withstand the winter and provide bulbs for use next May and June. This is an important crop, as it will furnish a supply at a time when spring sown Onions are scarce.

The ground in which the seeds are to be sown should not contain much manure, as the plants will withstand the winter better in ordinary soil than in rich land. Prepare the ground in the same manner as for spring sown Onions, but draw the drills a little deeper.

The largest and mildest-flavoured Onions

are produced from seeds sown in the autumn, provided the seedlings are transplanted to rich soil in the spring. The site for the crop should be prepared by manuring and trenching it in the winter and the work should be completed as early as possible so that the soil may be exposed to the winter weather for a long period. When the season arrives for transplanting the seedlings the surface of the bed should be broken up carefully and made firm, and the plants set out in rows 18 inches apart, allowing 12 inches between the plants in the rows. White Emperor, Record, Ailsa Craig, Premier and Long-keeping are good varieties for autumn sowing. *James A. Poole.*

BROAD BEANS.

EXPERIMENTAL work is most interesting and frequently helpful to gardeners. Not every practitioner is able to conduct experiments in a systematic manner because of the time involved. It is therefore, the duty of those who may be more fortunately placed to pass on the results of their work to others. That is the reason why I venture to record the result of an experiment in Broad Bean culture which I have conducted during the present season.

My object was twofold,—to test the merit of a few leading varieties of the Longpod section, and to prove the value or otherwise of removing suckers. The seeds were sown in early March, so soon as the bed could be obtained. Good culture has been practised and all varieties treated alike. Two double rows of the following varieties were grown, each row being twelve yards in length:—Bunyard's Exhibition, Johnson's Wonderful, Seville Giant, Leviathan and Ker's Exhibition.

I commenced to gather pods on July 2nd, and since that date the varieties have yielded as follows: Johnson's Wonderful, 48 lbs; Seville Giant, 39 lbs; Bunyard's Exhibition, 45 lbs; Ker's Exhibition, 32½ lbs; Leviathan, 40½ lbs. The beans were weighed in the pod; I was obliged to do this because they were for sale. The figures confirm my belief that Johnson's Wonderful is the best Longpod Broad Bean.

Every sucker was removed from one row of each variety so soon as it could be handled. I was anxious to concentrate energy in the main stems. The produce of each row was weighed and compared with that from which suckers had not been removed. Following are the respective weights. Suckers Removed:—Johnson's Wonderful, 25 lbs; Bunyard's Exhibition, 25 lbs; Leviathan, 21 lbs; Seville Giant, 20 lbs; and Ker's Exhibition, 14 lbs. Suckers not Removed:—Johnson's Wonderful, 23 lbs; Bunyard's Exhibition, 20 lbs; Leviathan, 19½ lbs; Seville Giant, 19 lbs; Ker's Exhibition, 15½ lbs.

It will be seen that there is a balance in favour of removing the suckers, so far as weight is concerned. The balance is tilted further by the fact that the produce is finer in every way. When the row was being cleared to make way for Carrots I examined the roots carefully and observed that those of the variety Leviathan carried the most nodules, and this was the third heaviest cropper. It surprised me a little as I expected to find the most nodules on the roots of the best cropper. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

The Lilies of Eastern Asia.*—In the review of this Monograph, I wrote that the plate of *L. Willmottiae*, described as having had its origin at the Arnold Arboretum, was apparently identical with a photograph taken many years ago by M. Mottet. Mr. E. H. Wilson has very kindly pointed out that this is not the case, and that the negative of the photograph, which was taken at the Arnold Arboretum on July 6, 1912, is in his possession. *A. Grove.*

* *Gard. Chron.*, July 4, 1925, p. 10.

Double Ranunculaceae.—Following my recent letter to *The Gardeners' Chronicle* (p. 453, June 27), on the question of double Ranunculaceae I think it may perhaps be worth recording that I have recently discovered another very interesting addition to this class of plants, namely, a double or rather semi-double variety of *Trollius europaeus*. I was collecting this summer in the Mount Cenis district, and one afternoon, whilst walking through many acres of Globe Flowers I had the good fortune to notice a plant with curiously semi-double flowers. Naturally I collected it, and fortunately it is, up to the present, in the best of health, and promises to be, eventually, a valuable addition to the garden. Instead of the usual five or so broad, round, incurved petals, my plant bears in the neighbourhood of sixty narrowish, sharply-pointed petals. The flower has very much the general appearance of a pale yellow *Helichrysum monstrosum*. The flowers bore apparently good carpels, though these withered away on the journey home. This is the first time that I have ever seen or heard of a double form of *Trollius*, but a good many years ago I found a very pale coloured form, also in the Mount Cenis district, when collecting with the late Reginald Farrer. This form, unfortunately, I lost, and have never seen its counterpart or discovered it again. *Clarence Elliott, Stevenage.*

The Biggest Wellingtonia in Britain.—Your correspondent, Mr. John Weathers (p. 33), enquires if there is a larger tree of *Wellingtonia* than the one he refers to in the New Forest. Some twenty odd years ago there was a *Wellingtonia* in the grounds of Poltimore, Exeter, which at that time measured about a hundred feet in height with a girth of twenty-three feet to twenty-four feet at five feet from the ground. This tree stood singly, and was one of several *Wellingtonias* planted about the time of the introduction of the tree into this country. This particular specimen was not the first one planted at Poltimore, but apparently its growth was enhanced by the soil it was growing in. It was much admired by the members of the British Arboricultural Society on one of their visits. *P. T. M.*

Davidson's Composition (*Gard. Chron.*, June 20, p. 456).—I know nothing about Davidson's Composition nor am I particularly knowledgeable in fruit growing, but I know that some eighteen years back Messrs. Dicksons, Ltd., of Chester, supplied a black, greasy composition for smearing on the stems of fruit trees to prevent rabbits eating the bark. At the time mentioned some new orchards of Apples, Pears and Plums were planted where rabbits were abundant and the composition supplied by Messrs. Dicksons Ltd., was easily applied, effectual and lasting. I believe Messrs. Dicksons Ltd. is an amalgamation of Messrs. James and Messrs. Arthur Dickson of Upton and Newton Nurseries, Chester. There is little doubt there are many farmers, gardeners and foresters who could testify to the value of the composition I refer to. *J. E., East Grinstead.*

Duplicate Names for Dahlia Novelties.—The raiser of a new variety of any plant has every right to name it as he pleases, and no one wishes to interfere with that right provided it is exercised with discretion. In the case of new varieties of Dahlias, however, it is to be feared that sufficient discretion is not being exercised, for there are too many cases in which the same name has been given to two or more distinct varieties. Without reference to catalogues, the following examples occur to my mind of names thus misused!—Radium, Vesuvius, Snowdrift, Liberty, White Star, Enchantress. It may, of course, be claimed in excuse that the varieties to which the same name has been given, belong to different sections

into which the Dahlia has been divided. This excuse is most lamentably insufficient, because there are many flower lovers who are unable to tell to which section any particular variety belongs, and indeed, experts differ when classifying some of our modern varieties, for some are intermediate between different sections and others produce on the same plant flowers of different sections. Even when the section is known, it is a nuisance to have to write the section after the name of a variety, and there is always the likelihood of the section being omitted from an order or a plant label. Equally inexcusable is the practice of giving different varieties names that are almost identical. For instance, Olivia is an old favourite, but two years ago an Olive was distributed. We also have a Lovely and a Lively. A worse instance was the introduction of Dazzle when we already had a popular variety known as Dazzler. I have seen the names of these two varieties confused in the gardening press, and when it comes to writing the names on garden labels, confusion is inevitable. Difficulties are also bound to arise if any further varieties are given names commencing with the prefixes "Love" or "Fire." Such names as Fireflaire and Fireflame are bound to be confused. Having ventilated my grievance it only remains to suggest the remedy, which is very simple. It is that all proposed names for new varieties should be submitted to the National Dahlia Society or some similar body for approval and registration before publication. Geo. F. Drayson, South Woodford.

Cheiranthus mutabilis.—I was much interested in Mr. Arnott's letter (p. 48) on *Cheiranthus mutabilis*, in which he speaks of two forms, the one about six inches high and the other "sometimes but not frequently, so much as a foot high." I have had *C. mutabilis* for about forty years, propagated by cuttings; the original plant or cuttings were given to me by my old friend the late Rev. Harpur Crewe, who probably had it from Madeira. It was figured in the *Bot. Mag.* t. 195, which I do not possess. As to size, I have just had a plant measured of which I enclose flowering growths—there are about 150 of these on a plant which has been five years in its present position, on the top of a rockery fully exposed to east winds! The circumference of the stem four inches from the ground is six-and-a-half inches, its height three feet six inches, and width over top, four feet six inches. These dimensions are hardly those of a "dwarf Wallflower" as spoken of by Mr. Arnott! Alfred O. Walker, F.L.S., Ucombe Place, Maidstone.

Ken Wood.—With regard to your announcement on p. 81 of your issue of the 1st of August, I should like to be permitted to correct the impression which has got abroad that Ken Wood is closed to children unless accompanied by adults. This most wise and necessary regulation only applies to the actual woodland, a small part of Ken Wood. The portion acquired for the public consists mainly of sloping meadows containing well-fenced and very beautiful pools of water, and to these meadows the children are freely admitted and thoroughly enjoy themselves. The tiny piece of forest-land is in every way unsuitable for children; the undergrowth has been lightly fenced, doubtless to prevent picnic parties from having camp-fires there, and wide paths run through it in every direction, making an ideal strolling place for adults, whose pleasure would be greatly lessened by the presence of children, without the latter being correspondingly benefited. Another excellent reason for the regulation lies in the fact that in this little piece of woodland there are at present many birds which have been driven away from other parts of London, and which may possibly remain at Ken Wood if undisturbed. It is to be hoped that the Parks Committee of the L.C.C. will not yield to ignorant clamour in this respect, but will make the real facts as to the admission of children to Ken Wood widely known. M. A. Bryan.

SOCIETIES.

ROYAL HORTICULTURAL

Awards to First-Early Culinary Peas.

THE following awards have been made by the Royal Horticultural Society to first-early culinary Peas after trial at Wisley.

FIRST-CLASS CERTIFICATES.

Laxton's Superb, sent by Messrs. HURST AND SON, Houndsditch, E.; Messrs. NUTTING AND SONS, Southwark Street, S.E.; Messrs. DOBBIE AND CO., Mr. W. H. SIMPSON, Messrs. KELWAY AND SON, Mr. H. J. SPEED, Messrs. BARR AND SONS; and to *Superb Re-selected*, sent by Messrs. J. CARTER AND CO.

AWARD OF MERIT.

Tip Top, sent by Messrs. KELWAY AND SON; Messrs. CULLEN, Witham; Messrs. HARRISON AND SONS, Leicester; and Mr. SPEED, Evesham; and to *Bedford Champion*, sent by Messrs. LAXTON BROS., Bedford; Messrs. HURST AND SON, London; Mr. SIMPSON, Birmingham; Messrs. DOBBIE AND CO., and Messrs. KELWAY AND SON.

HIGHLY COMMENDED.

Kelvedon Wonder, sent by Messrs. HURST AND SON, Messrs. DOBBIE AND CO., and Messrs. R. VEITCH AND SON. *Blue Bird*, sent by Messrs. CULLEN, Messrs. NUTTING AND SONS, Messrs. A. DICKSON, LTD., Messrs. HARRISON AND SONS, and Messrs. KELWAY AND SON. *British Lion*, sent by Messrs. HURST AND SON, Mr. JOHNSON, and Messrs. KELWAY AND SON. *Early Duke*, sent by Messrs. J. CARTER AND CO. *Gradus*, sent by Messrs. MORSE, San Francisco, Messrs. W. H. SIMPSON, Messrs. KELWAY AND SON, and Messrs. HURST AND SON. *Express*, sent by Messrs. DOBBIE AND CO.

COMMENDED.

Velocity (Stocks Nos. 1, 2, and 3), sent by Messrs. HURST AND SON. *Superior*, sent by Messrs. J. CARTER AND CO. *Thomas Laxton*, sent by Messrs. HURST AND SON, Messrs. NUTTING AND SONS, Messrs. MORSE, Messrs. DOBBIE AND CO., Messrs. KELWAY AND SON, Messrs. CULLEN, and Mr. JOHNSON.

Awards to Cistuses.

THE following awards have been made by the Royal Horticultural Society to Cistuses, after trial at Wisley.

AWARDS OF MERIT.

Silver Pink, sent by Messrs. HILLIER AND SONS, Winchester; *C. florentinus*, *C. formosus unicolor*, *C. purpureus*, and *C. cyprinus*, these four sent by the ROYAL HORTICULTURAL SOCIETY.

Awards to Helianthemums.

THE following awards have been made by the Royal Horticultural Society to Helianthemums after trial at Wisley.

AWARDS OF MERIT.

(Flowers yellow).—*Canary* (alpestre), sent by R.H.S.; and *St. John's College Yellow*, sent by Mr. W. M. CHRISTY, Elmsworth.

(Flowers coppery-orange).—*Fireball*, sent by R.H.S.; *Rubens*, sent by Mr. H. HEMSLEY, Crawley; and *Bronze King*, sent by Messrs. BACKHOUSE AND CO. All these three sorts are alike.

(Flowers copper, centre-crimson).—*Chocolate Blotch*, sent by Mr. W. M. CHRISTY.

(Flowers crimson).—*Ben Lui*, sent by Mr. J. NICOLL.

HIGHLY COMMENDED.

(Flowers Salmon).—*Watergate Pink*, sent by Mr. W. M. CHRISTY.

(Flowers rosy-cerise).—*Jack Scott*, sent by Mr. W. M. CHRISTY; and *Rosy Gem*, sent by Messrs. BAKERS.

COMMENDED.

(Flowers yellow).—*Starlight*, sent by Mr. W. M. CHRISTY; and *lunatum*, sent by BACKHOUSE NURSERIES, LTD., and Mr. R. NOTCUTT, Woodbridge.

(Flowers salmon).—*Salmon Queen*, sent by Mr. F. C. WOOD and Mr. H. HEMSLEY.

(Flowers yellow, centre scarlet).—*Sensation*,* sent by Mr. H. HEMSLEY.

Delphiniums.

THE following awards have been made to Delphiniums by the Royal Horticultural Society, after trial at Wisley.

AWARDS OF MERIT.

BELLADONNA TYPE: *Mrs. J. S. Brunton*, sent by Messrs. RUYS, Dedemsvaart; VAN EGMOND, Oegstgeest, and Messrs. J. FORBES, Ltd., Hawick. *Mrs. Thomson*, sent by Mr. RUYS and Mr. VAN EGMOND.

ELATUM TYPE: *Blue Princess*, *Mrs. Townley Parker*, *Queen Mary*, *Constance*, *Blue Boy*, *Col. Sir Wyndham Murray*, *Mrs. Shirley*, *Mrs. Colin McIvor*, *Lord Derby*, *Marjorie Ferguson*, *Nora Ferguson*, *Walter T. Warr*, *Edward Bromet*, *Millicent Blackmore*, *Mrs. H. Kaye*, and the *Rev. E. Lascelles*, all sent by Messrs. BLACKMORE AND LANGDON, Bath. *Lize*, sent by Mr. VAN EGMOND, Mr. RUYS and Mr. H. J. JONES; *Sister Clare*, sent by Mr. F. GIFFORD, Hornechurch; *Johan*, sent by Mr. VAN EGMOND; *Charity*, sent by Mr. W. SAMUEL, Wrexham; *Queen of Spain*, sent by Mr. RUYS; *Mrs. Shirley*, *Winsome*, *Mrs. Edmunson*, *Nora Ferguson*, *King of Delphiniums*, *Weycourt Gem*, *Corry*, *Millicent Blackmore*, *Patricia*, *Rev. E. Lascelles*, and *Major Pat a Beckett*, all sent by Mr. H. J. JONES; *Nora Ferguson*, *King of Delphiniums*, *Mrs. Creighton*, *Corry*, and *Rev. E. Lascelles*, all sent by Mr. RUYS; *Mrs. Willy van Egmond*, sent by Mr. VAN EGMOND; *King of Delphiniums*, sent by Messrs. J. FORBES, LTD., and Mr. VAN EGMOND; *Corry*, sent by Messrs. J. FORBES, LTD., Mr. F. Koppius, sent by Mr. VAN EGMOND; *Mrs. H. Kaye*, sent by Messrs. BAKERS; *Blue Bird*, sent by Messrs. TUCKER, Headington; *Jean*, sent by Messrs. BAKERS; *Rev. E. Lascelles*, sent by Messrs. J. FORBES, LTD.; *Queen of the Belgians*, sent by Mr. F. GIFFORD; *Hugh Mitchell*, and *Admiration* sent by Messrs. BAKERS LTD.

HIGHLY COMMENDED.

BELLADONNA TYPE: *Orion*, sent by Messrs. BAKERS, Thompson and Morgan, B. Ruys, and Van Egmond; *Persimmon*, sent by Mr. Ruys; *Capri*, sent by Messrs. Ruys and Van Egmond; *Novice*, sent by Mr. Van Egmond; *Lamartine*, sent by Messrs. Ruys, Van Egmond and H. J. Jones; *Nassau*, sent by Mr. Van Egmond; *Captivant*, sent by Mr. Ruys; *Horatius*, sent by Messrs. Van Egmond and Ruys.

ELATUM TYPE: *Blue Badder*, sent by Messrs. Blackmore and Langdon; *Mrs. Roper*, sent by Messrs. Van Egmond and H. J. Jones; *Derbyshire*, sent by Mr. H. Ballington, Matlock; *Blue Queen*, sent by Messrs. Blackmore and Langdon; *Col. Douglas*, sent by Messrs. Blackmore and Langdon, and Ruys; *Cecilia*, sent by Mr. Jones; *Butterfly*, sent by Messrs. Bakers; *Duke of Connaught*, sent by Mr. Jones; *Wrexham*, sent by Mr. W. Samuel; *Mrs. Christie-Miller*, sent by Messrs. Blackmore and Langdon; *Peggy*, sent by Mr. Jones; *Glory*, sent by Messrs. Blackmore and Langdon, Jones, and Van Egmond; *Miss W. B. Mackintosh*, sent by Mr. Bones, Cheshunt; *David*, sent by Messrs. Bakers; *Dainty*, sent by Messrs. Bakers; *The Shah*, sent by Messrs. Blackmore and Langdon; *Mrs. Andrew Carnegie*, *Marie Closon*, sent by Mr. Van Egmond; *Pannonia*, sent by Mr. Ruys; *Carrie*, sent by Mr. Ruys; *Prince of Wales*, sent by Mr. Van Egmond; *Elegance*, sent by Messrs. Blackmore and Langdon; *Amos Perry*, sent by Mr. Van Egmond, and Mr. Ruys; *Novelty*, sent by Messrs. Blackmore and Langdon; *Elaine Lettor*, sent by Mr. H. J. Jones; *F. W. Smith*, sent by Messrs. Bakers, Ruys, and H. J. Jones; *Sven Ridder*, sent by Mr. B. Ruys, and *Purple Emperor*, sent by Mr. Trinder, Fleet, Hants.

* Award recommended June 2, 1925.

ST. STEPHEN'S HORTICULTURAL.

OPENED by the Mayor of St. Albans (Miss M. Wix), the annual exhibition of this young Society, held in The Park, Frogmore, on July 23, proved a highly successful function. Over five hundred competitive entries were staged and the trade exhibits were a remarkable feature of the show. Silver Medals were awarded to Messrs. SANDERS, St. Albans, for Orchids, Messrs. CHAPLIN Bros., Waltham Cross, and Messrs. H. LANE AND SON, Berkhamsted, for Roses, and Messrs. T. RIVERS AND SON, Sawbridgeworth, for a fine exhibit of pot fruit trees. Messrs. HARKNESS AND CO., and Messrs. WHEELER of Hitchin secured bronze medals for displays of Roses, and similar distinctions were accorded Mr. CLARENCE ELLIOTT, of Stevenage for alpine plants, and Messrs. WM. CUTBUSH AND SON, of Barnet, for herbaceous plants.

A grand honorary group of Campanulas staged by J. PIERPOINT MORGAN, Esq., of Wall Hall, Watford (gr. Mr. F. A. Steward), and a fine display of Sweet Peas from H. R. WHITEHEAD, Esq., St. Albans (gr. Mr. Munt), both earned silver medals, and a bronze medal was awarded to SYDNEY BRUNTON, Esq. (gr. Mr. F. Drennan), for a group of miscellaneous flowering plants.

Mr. W. G. FRANKLIN won the Wells Cup for the highest number of points, and the Venning Cup for the best cultivated allotment. The Royal Horticultural Society's Banksian Medal was won by Mr. W. WALKER, and Mrs. L. MARTIN secured the Challenge Rose Bowl for the highest number of points in the Ladies' Section.

YORKSHIRE SHOW.

THIS year the Yorkshire Show was held at Bradford in July, and the Horticultural Section was well up to the usual high standard of excellence.

Liberal prizes were provided, competition was keen, and many fine non-competitive displays were made. The show is admirably managed by Major Dent, the Chief Steward, and Mr. Peter Blair.

The main features of the show were the groups of miscellaneous plants, Roses, Sweet Peas, and hardy flowers. Numerous prizes were provided for Allotments and District Societies, where the keenest competition prevailed, twenty and thirty entries in a class being quite common.

In the open class for a group of miscellaneous plants, in or out of bloom, occupying three-hundred-and-fifty square feet, the premier award of £40 was won by Messrs. JAMES CYPHER AND SONS, Cheltenham, with a charming display of brilliantly coloured Codiaeums and Dracaenas, with Odontoglossums, Cattleyas, Lilioms and other well grown flowering plants. Mr. W. A. HOLMES, Chesterfield, came second with a light and graceful arrangement. Mr. T. M. PETCH, third. On this occasion there was only one exhibitor of a group of Carnations, fifteen feet by five feet; this was Mr. Engelmann, Saffron Walden, who was awarded the first prize of £15 for well grown flowers in great variety and most tastefully arranged.

The class for a collection of hardy perennial plants and cut blooms, arranged on a space thirty feet by ten feet, brought out very keen competition, four excellent exhibits being staged. The first prize of £22 was well won by Messrs. WM. ARTINDALE AND SON, Sheffield, with well grown flowers lightly and gracefully arranged. The group was well finished and there was no undue crowding. Messrs. GIBSON AND CO., Bedale, were placed second, with a light arrangement; Messrs. HARKNESS AND SONS, Bedale, third, with flowers of wonderful quality; and Messrs. GEO. LONGESTER AND SONS, fourth, with a fine group.

MESSRS. R. BOLTON AND SON won the first prize of £12 for a collection of Sweet Peas arranged on a space twenty feet by five feet, with a

splendid exhibit; Messrs. WADSWORTH Bros. Bishop Wilton, York, second.

For twelve distinct varieties of Sweet Peas, Messrs. ROBERT BOLTON AND SON were again first prize winners, with Mr. STEPHEN SHACKELTON, Keighley, second, and Messrs. WADSWORTH Bros., third.

Collections of cut Roses were finely shown considering the weather and other difficulties. Mr. J. ROBINSON, Nottingham, won the chief award with a display which contained the leading varieties.

Trade displays were very good, and contributed largely to the general attractiveness of the whole show.

Large Gold Medals were awarded to Messrs. DOBBIE AND CO., for a magnificent exhibit of Roses and Sweet Peas; Messrs. ALLWOOD Bros., for a fine exhibit of Carnations and Dianthus Allwoodii varieties; to Messrs. ROBERT BOLTON AND SONS for Sweet Peas, and to Messrs. ALEX. DICKSON AND SONS, Newtownards, for Roses.

Gold Medals were awarded to Messrs. KENT AND BRYDON, Darlington, for trees and shrubs; Messrs. ALEX. DICKSON AND SONS, for Sweet Peas; Messrs. TOOGOOD AND SONS, for Gladiolus; Messrs. CONWAY, LTD., Halifax, for a Rock Garden; Messrs. ISAAC HOUSE AND SON, for Scabious and Gaillardias; and to Messrs. JOHN FORBES AND SON, for Phloxes, Carnations, Stocks and Pentstemons.

A Silver-Gilt Medal was awarded Messrs. ROGERS, Pickering, for Alpines.

SOCIÉTÉ NATIONALE DE HORTICULTURE DE FRANCE.

THE principal feature of the last horticultural show organised by the French National Horticultural Society in connection with the Paris Exhibition of Decorative Art was an immense floral group effectively arranged by Messrs. VILMORIN-ANDRIEU ET CIE, of Paris, in the form of a Greek Temple. The pillars were ornamented with climbing Tropaeolums; in the centre was a tapering group of double, mauve-flowered Stocks, surrounded by Gloxinias Progress, France, Patrie, and others. Around the temple were dwarf Tropaeolums of various colours, with a border of Tagetes, blue Lobelia, and golden Pyrethrums, and here and there sheaves of cut Sweet Peas. The cupola was furnished at the summit with a border of violet Petunias, behind which was a band of orange Tropaeolums. In the foreground was a hollow circle with a turfed surround, on which were laid garlands of dwarf Antirrhinums, with pale pink flowers; then a collection of various flowering plants, grouped according to colour—dwarf Tropaeolums, Antirrhinums, Zinnias, Godetias, Petunias, etc. At each end was a bed of dwarf blue Ageratum, bordered with pink Antirrhinums; while at the four corners there were immense sheaves of the new hybrid Primulinus Gladioli, such as La Lys, La Noye, Martinet, and Gélénotte. The display demonstrated "decorative art" in the literal sense of the word.

Other exhibitors were MM. FERARD, of Paris, who had a pretty floral group, chiefly of cut Gladioli (America, Halley, etc.); blue and white Agapanthus, tastefully shown in artistic earthenware pots; a little cement basin containing Nymphaeas; a paved walk, the interstices of which were planted with tiny Alpine plants, and a little rockery.

The City of Paris showed a collection of plants grown under glass, including a fine specimen of Dracaena indivisa atropurpurea; and stove plants were also exhibited by M. GAUTHIER, of Bagneux. MM. CAYEUX ET LE CLERC, of Paris, showed a fine lot of hardy plants; M. NOMBLOT, of Bourg-a-Reine, fruit trees in pots, and the well-known firm of LEVEQUE, of Ivry, sent Roses in excellent form.

There were very few Orchids, but MM. VACHEROT ET LECOUFFLE sent a small lot, and so did one or two other growers. A.M.

ANSWERS TO CORRESPONDENTS.

GLADIOLUS MARTHA WASHINGTON. This variety, which gained an Award of Merit at the Royal Horticultural Hall on July 28, was shown by Mr. George Churcher, Beckworth, Lindfield, Sussex, and not by Messrs. J. Kelway and Son.

GREEN SCUM AT THE BOTTOM OF CEMENT POOL: A. A. M. The best method of clearing the scum from the bottom of your cement pool is to empty the pool and scrub the cement base; after a thorough cleansing allow the cement to become dry before admitting clean water. The fish should be netted and kept in another pool or vessel while cleaning operations are being carried out.

GREEN GOOSEBERRIES ROTTING: D. L. N. We cannot discover any reason for the rotting of the green Gooseberries. There appears to be no fungus on the green fruits sent, consequently we can only surmise there has been some error in cultivation or in spraying.

NAMES OF PLANTS: H. B. 1, Spiraea Ulmaria fl. pl.; 2, Achillea Ptarmica var. The Pearl; 3, Cupressus Lawsoniana; 4, Deutzia crenata; 5, Phillyrea media; 6, 9, 14, 15, 16, and 18, too small to identify; 7, Geranium species; 8, Phillyrea Vilmoriniana; 10, Cornus alba var. sibirica variegata; 11, C. Spaethii; 12, Deutzia scabra; 13, Spiraea Douglasii; 17, Catalpa bignonioides; 19, Symphoricarpos racemosus; 20, Populus nivea. H. G. G. Appears to be Blush Rambler, but we cannot undertake to name Roses. B. T. Probably Prunella vulgaris. H. E. 1, Spiraea Bumalda; 2, S. Douglasii; 3, Erigeron speciosus; 4, Polygonum cuspidatum; 5, Cornus species; 6, Phalangium virgatum; 7, Artemisia Abrotanum; 8, Hedera Helix variety; 9, Berberis Darwinii; 10, not recognised. W. J. W. Ulmus campestris variegata. F. D. C. Lilium testaceum. Chauv. Juniperus virginiana var. Schottii. G. W. C. Cypripedium Little Gem (Harrisianum × Baron Schröder); 2, C. Measuresianum (villosum × venustum).

PEACH LEAVES DISEASED: O. F. The Peach leaves show a growth of the fungus Cladosporium (in its "budding" stage, Dematium pullulans). It is probable, however, that this fungus is not the cause of the falling of the leaves, but it has attacked them after they have been weakened from some other cause. Possibly there is something wrong with the cultural conditions; indeed, the presence of red spider on the leaves indicates that the atmosphere is too dry. Possibly sulphur has been applied to the hot-water pipes, and if so this might be the cause of the leaves falling.

TOMATOS MISSHAPEN: A. B. The large and coarse fruits on the early trusses suggest a too rich soil, probably an excess of nitrogen in some form. By the time the later trusses were formed the excess of nitrogen would have been dissipated and, in consequence, the fruits would be normal. The source of the seeds from which the plants were raised would have no bearing on the trouble.

STRAWBERRIES FAILING: M. M. Although the general appearance suggests "red plant," a disease attributed to attacks by eelworm, the plant sent did not contain any eelworms.

Communications Received.—W. H. W.—W. E. J.—E. P. and C.—J. T. W.—J. W. B.—A. W.—J. O. B.—H. E. G.—A. H. W.—R. W. T.—A. O.—W. F. S.—E. M. B.—J. J.—A. T. J.—J. C.—F. S.—T. W. T.—H. P.—E. M.—S. A.—C. E.—C. R.—J. T. B.—A. T. H.—F. J.—W. A.—J. K. E.—W. C. M.—L. G. P.—G. P. S.—T. J. H.—R. J. H.

MARKETS.

COVENT GARDEN, Tuesday, August 4th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum cuneatum	per doz. ... 10 0-13 0	Hydrangea	per doz. ... 18 0-24 0
—elegans	per doz. ... 10 0-12 0	—blue, 48's	per doz. ... 30 0-48 0
Aralia Sieboldii	per doz. ... 9 0-10 0	—32's	per doz. ... 24 0-36 0
Araucarias	per doz. ... 30 0-42 0	—32's	per doz. ... 24 0-36 0
Asparagus plu-	per doz. ... 12 0-18 0	—32's	per doz. ... 24 0-36 0
—mosus	per doz. ... 12 0-18 0	—32's	per doz. ... 24 0-36 0
—Sprengeri	per doz. ... 12 0-18 0	—32's	per doz. ... 24 0-36 0
Aspidistra, green	per doz. ... 36 0-60 0	—32's	per doz. ... 24 0-36 0
Asplenium	per doz. ... 12 0-18 0	—32's	per doz. ... 24 0-36 0
—32's	per doz. ... 24 0-30 0	—32's	per doz. ... 24 0-36 0
—nidus	per doz. ... 12 0-15 0	—32's	per doz. ... 24 0-36 0
Cacti, per tray,	per doz. ... 5 0-7 0	—32's	per doz. ... 24 0-36 0
—12's, 15's	per doz. ... 5 0-7 0	—32's	per doz. ... 24 0-36 0
Crotons, per doz.	per doz. ... 30 0-45 0	—32's	per doz. ... 24 0-36 0
Cyrtomium	per doz. ... 10 0-25 0	—32's	per doz. ... 24 0-36 0
Hydrangea	per doz. ... 18 0-30 0	—32's	per doz. ... 24 0-36 0
—White, 48's	per doz. ... 18 0-30 0	—32's	per doz. ... 24 0-36 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Achillea, per doz.	per doz. ... 5 0-6 0	Heather, pink, per	per doz. ... 8 0-9 0
Adiantum deco-	per doz. ... 9 0-10 0	Lapagerias, per	per doz. ... 3 6-4 0
—cuneatum, per	per doz. ... 6 0-8 0	Lavender, per doz.	per doz. ... 9 0-15 0
Asparagus plu-	per doz. ... 2 0-3 0	Lilium longiflorum	per doz. ... 3 0-3 6
—mosus, per bun.	per doz. ... 1 6-2 6	—speciosum	per doz. ... 3 0-4 0
—long trails, 6's	per doz. ... 1 6-2 6	—album, long, per	per doz. ... 3 0-4 0
—med. sprays	per doz. ... 1 6-2 6	—short, per doz.	per doz. ... 3 0-4 0
—short	per doz. ... 1 6-2 6	—speciosum	per doz. ... 3 0-4 0
—Sprengeri, per bun.	per doz. ... 1 6-2 6	—rubrum, long,	per doz. ... 4 0-5 0
—long sprays	per doz. ... 1 6-2 6	—per doz. blooms	per doz. ... 4 0-5 0
—med. " "	per doz. ... 1 6-2 6	—short	per doz. ... 3 0-5 0
—short	per doz. ... 1 6-2 6	Lily-of-the-Valley,	per doz. ... 24 0-30 0
Asters, white, per	per doz. ... 5 0-8 0	Montbretia, per	per doz. ... 6 0-8 0
doz. bun.	per doz. ... 5 0-8 0	—Cattleyas	per doz. ... 36 0-48 0
Carnations, per	per doz. ... 1 6-3 0	—Cypripediums	per doz. ... 5 0-7 0
doz. blooms	per doz. ... 1 6-3 0	Roses, per doz.	per doz. ... 1 6-2 6
Chrysanthemum	per doz. ... 3 0-4 0	—blossoms, Rich-	per doz. ... 1 6-2 6
—maximum, doz.	per doz. ... 3 0-4 0	—Liberty	per doz. ... 1 6-2 6
—white, per doz.	per doz. ... 5 0-6 0	—Madame Butter-	per doz. ... 1 6-2 6
—blossoms	per doz. ... 5 0-6 0	—Mme. A. B. L.	per doz. ... 1 6-2 6
—bronze, per doz.	per doz. ... 2 0-3 0	—Chatenay	per doz. ... 1 6-2 6
—blossoms	per doz. ... 2 0-3 0	—Melody	per doz. ... 1 6-2 6
—bronze, per doz.	per doz. ... 10 0-12 0	—Molly Sharrman	per doz. ... 2 0-2 6
Coronopsis, per doz.	per doz. ... 1 3-1 6	—Crawford	per doz. ... 2 0-2 6
—bun.	per doz. ... 1 3-1 6	—Ophelia	per doz. ... 2 0-2 6
Cornflowers, per	per doz. ... 2 0-2 6	—Sunburst	per doz. ... 2 0-3 0
doz. bun.	per doz. ... 2 0-2 6	Scabiosa caucas-	per doz. ... 4 0-5 0
Croton leaves	per doz. ... 0 9-2 6	—bun.	per doz. ... 4 0-5 0
Delphiniums, var-	per doz. ... 2 0-3 0	—Smilax, per doz.	per doz. ... 3 0-3 6
ious, per doz.	per doz. ... 2 0-3 0	—Stalix, mauve	per doz. ... 6 0-12 0
—spikes	per doz. ... 2 0-3 0	—yellow, per doz.	per doz. ... 6 0-9 0
Echinopsis, per	per doz. ... 6 0-8 0	—white, per doz.	per doz. ... 6 0-9 0
doz. bun.	per doz. ... 6 0-8 0	—pink, per doz.	per doz. ... 6 0-9 0
Eryngium, per	per doz. ... 8 0-10 0	—Suworowii, per	per doz. ... 8 0-12 0
doz. bun.	per doz. ... 8 0-10 0	—latifolia, per	per doz. ... 10 0-12 0
Fern, French, per	per doz. ... 0 9-1 0	—incana, per doz.	per doz. ... 9 0-12 0
doz. bun.	per doz. ... 0 9-1 0	—bun.	per doz. ... 9 0-12 0
Gaillardia, per	per doz. ... 3 6-4 0	Stephanotis, per	per doz. ... 2 6-3 0
doz. bun.	per doz. ... 3 6-4 0	—72 pips	per doz. ... 2 6-3 0
Gardenias, per	per doz. ... 6 0-12 0	Stock, English	per doz. ... 6 0-8 0
box, 12's, 18's	per doz. ... 6 0-12 0	—white	per doz. ... 6 0-8 0
Gladioli, white,	per doz. ... 12 0-15 0	Sultan, white, per	per doz. ... 4 0-6 0
—per doz. bun.	per doz. ... 12 0-15 0	—mauve, per doz.	per doz. ... 4 0-6 0
—primulins, per	per doz. ... 2 6-3 0	—bun.	per doz. ... 4 0-6 0
—doz. spikes	per doz. ... 2 6-3 0	—yellow, per doz.	per doz. ... 5 0-6 0
—Halley, per doz.	per doz. ... 2 6-3 0	Sweet Peas, per	per doz. ... 4 0-0 0
—spikes	per doz. ... 2 6-3 0	—doz. bun.	per doz. ... 4 0-0 0
—Prince of Wales	per doz. ... 2 6-3 0	Violas, per doz. bun.	per doz. ... 1 0-1 6
—per doz. spikes	per doz. ... 2 6-3 0		
—scarlet, per doz.	per doz. ... 3 0-4 0		
—spikes	per doz. ... 3 0-4 0		
—cream, per doz.	per doz. ... 3 0-4 0		
—spikes	per doz. ... 3 0-4 0		
—Giant White,	per doz. ... 2 0-3 0		
—per doz. spikes	per doz. ... 2 0-3 0		
Gypsophila panic-	per doz. ... 6 0-0 0		
ulata, per doz.	per doz. ... 6 0-0 0		
—bun.	per doz. ... 6 0-0 0		
Heather, white,	per doz. ... 12 0		
—per doz. bun.	per doz. ... 12 0		

REMARKS.—Supplies of outdoor blooms have been considerably reduced owing to the rough weather, and with the exception of Statice sinuata prices have been firmer. Carnations and Roses were a trifle firmer in price towards the week end owing to the extra demand; the former are of very medium quality just now, but the cooler weather is more suitable for Roses. All Liliums are again easier in price and the quality throughout very good. White Asters are arriving in better condition and more coloured blooms are offered. Double white Stock is also a useful line at the present time, the quality being generally good. Amongst Chrysanthemums bronze varieties are more plentiful than white. Gypsophila paniculata, double, is arriving in good condition and there are small supplies of Montbretia. There is an ample supply of Gladioli both from home growers and from Holland.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English—		Grapes—	
—Early Victoria,	per doz. ... 2 6-6 0	—Muscat	per doz. ... 2 6-5 0
—Grenadier	per doz. ... 3 0-8 0	—Canon Hall	per doz. ... 3 0-7 0
—Gladstone	per doz. ... 2 0-4 0	Grape Fruit,	
—Beauty of Bath	per doz. ... 2 0-6 0	—Florida, finest	per doz. ... 55 0-60 0
—bushel	per doz. ... 2 0-6 0	—South African,	per case ... 35 0-38 0
New Zealand, per		Lemons, Messina,	
case—		—per box	per doz. ... 12 0-15 0
—Sturmer	per doz. ... 8 0-19 0	—Murcia	per doz. ... 11 0-20 0
—Others	per doz. ... 8 0-12 0	—Naples	per doz. ... 15 0-30 0
Tasmanian, per		Melons (Forced)	
case—		—basket	per doz. ... 10 0-14 0
—Sturmer	per doz. ... 10 0-12 0	—Cantaloupes	per doz. ... 5 0-12 6
—Others	per doz. ... 8 0-12 0	Nectarines, per	
Bananas	per doz. ... 15 0-25 0	—doz.	per doz. ... 6 0-21 0
Cherries—		Oranges, Jaffa	per doz. ... 16 0-18 0
—August Hearts	per doz. ... 16 0-20 0	—Spanish—per case	per doz. ... 25 0-35 0
—black, English	per doz. ... 10 0-18 0	—30's	per doz. ... 25 0-35 0
—Napoleon	per doz. ... 8 0-16 0	—50's	per doz. ... 20 0-30 0
Currants, Black,		—South African,	per case ... 20 0 25 0
—English per lb.	per lb. ... 0 9	Peaches, English	per doz. ... 6 0-24 0
—Red, 1-sieve	per lb. ... 4 0-6 0	—South African,	per doz. ... 5 0-8 0
Gages, Spanish		—box	per doz. ... 6 0-7 0
—1-sieve	per doz. ... 8 0-16 0	Plums, Spanish,	
Gooseberries,		—1-sieve	per doz. ... 7 0-10 0
—cooking berries	per 1-sieve ... 2 0-3 6	—French, crate	per doz. ... 6 0-8 0
—dessert berries,	per lb. ... 0 4-1 6	Raspberries—	
Grapes—		—dessert, per lb.	per lb. ... 1 3-1 6
—Alicante, per lb.	per lb. ... 1 6-2 6	—3 lb. chips	per lb. ... 1 6-2 3
—Belgian	per lb. ... 1 6-2 0		
—English	per lb. ... 1 6-2 0		
—Hamburg, lb.	per lb. ... 1 6-3 0		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—		Marrows, tally	per doz. ... 5 0-7 6
—Evesham, flat	per doz. ... 6 0-8 0	Onions—	
—Scarlet Runner,	per doz. ... 5 0-7 0	—English, per cwt.	per cwt. ... 12 6-14 0
—bushel	per doz. ... 5 0-7 0	—Valencia	per cwt. ... 12 0-13 0
Beets, new, per		—Dutch	per cwt. ... 11 0-12 0
doz. bun.	per doz. ... 3 0-4 0	Parsnips, per cwt.	per cwt. ... 6 0-8 0
Cabbage, per tally	per doz. ... 7 6-10 0	Peas, Yorkshire,	per 1 bag ... 5 0-6 0
Cauliflowers, per		Potatoes—	
doz.	per doz. ... 2 0-4 0	—English, per	per cwt. ... 6 0-8 0
Carrots, new, per		—cwt.	per cwt. ... 6 0-8 0
bag	per doz. ... 7 6-8 0	Spinach "New	
Cucumbers, per doz.	per doz. ... 5 0-6 0	—Zealand," per	per 8 lb. ... 2 6-3 0
—Flats, 36's, 42's	per doz. ... 12 0-18 0	Tomatoes, English,	
Dutch Onions	per doz. ... 11 0-12 0	—per strike—	
Endive, per doz.	per doz. ... 2 6-3 0	—pink	per doz. ... 4 0-5 0
Greens, best, per		—pink & white	per doz. ... 4 0-5 0
bag	per doz. ... 4 0-5 0	—white	per doz. ... 3 0-3 6
Horseradish, per		—blue	per doz. ... 3 0-3 6
bundle	per doz. ... 2 0-2 6	—Guernsey	per doz. ... 3 0-6 0
Lettuce, Cos, doz.	per doz. ... 1 0-3 0	—Dutch	per doz. ... 1 6-3 0
—Cabbage Let-		Turnips, new, per	per doz. ... 5 0-10 0
tuce	per doz. ... 2 0-3 0	—doz. bun.	per doz. ... 5 0-10 0
Mushrooms, cups	per doz. ... 2 6-3 6		
—Broilers	per doz. ... 1 3-2 0		

REMARKS.—Some improvement has been noticeable in certain sections, mainly due to the increased demand during holiday week. English Apples have come along in larger quantities, and while large cookers and good, coloured dessert fruits are wanted, seconds of both sorts are a very slow trade. Choice fruits have moved fairly freely, hothouse Grapes, Peaches, Nectarines and Melons maintaining a good price level. Cherries are scarce and dear, sound fruits making increased prices. A few Black Currants are still arriving, but quotations are now easier; most jam makers having fulfilled requirements. Dessert Gooseberries are selling well, but cooking sorts are in poor demand. Mushrooms are a moderate supply and prices are keeping firm. Salads are wanted, but green vegetable are more plentiful and cheaper. Beans and Marrows are cheaper. Plums, such as Early Rivers, Czar, Orleans and a few Monarchs are now arriving and are selling at satisfactory prices.

GLASGOW.

The acute depression in the cut flower market which began with the advent of July, still continues. Salesmen again experienced great difficulty in disposing of supplies, and prices remained at unremunerative levels. Exceptionally good Gladioli were firm, being freely sold at 2d. and 3d. per spike; ordinary sold at 3d. to 8d. for medium bunches, while specials averaged 1s. 6d. to 6s. On the other hand, Marguerites were offered during the week at 6d. per box of eighteen bunches, but specials were worth about 3d. per bunch. Ordinary Sweet Peas made 1d. and 2d. per bunch and specials 3d. to 5d.; Carnations ranged from 10d. to 1s. 6d. per dozen; Lilium Harrisoni, 2s. 6d. to 4s. per bunch; Richmond Roses, 1s. to 2s.; Mme. Abel Chateaux, Ophelia, and Butterflies, 1s. to 2s.; Stocks, 6s. per dozen bunches; small Asters, 1d. and 1½d. per bunch; large, 3d. to 6d.; Gypsophila paniculata—single, 1½d. per bunch, double, 3d. and 6d.; Smilax, 1s. 6d. to 2s.; and Asparagus, 6d. to 2s.

In contrast to the flower market, fruits, especially soft varieties, were very dear, and the high prices are restricting consumption. Scotch Black Currants fluctuated between 10d. and 1s. 2d. per lb.; English, 10d. and 1s.; Irish, 5s. 6d. per 6-lb. chip; Norwegian, 6s. per chip of 6½ lbs.; Red and White Currants, 3d. and 4d.; Raspberries, 9d. and 1s.; Gooseberries, per punnet, 2d. and 2½d.; red, 3d. and 3½d.; sulphurs, 4d.; Black Cherries, 20s. to 22s.; Napoleons,

18/- to 20/-; Morello, 3/6 per 4-lb. chip; Scotch Peaches 4/- and 5/- per doz.; English Cooking Apples, 3d. per lb.; Spanish Greengages, 20/-; French, 18/-; cooking, 10/6; Cherry Plums, 9d. per lb.; Williams' Pears, 48's, 11s. 6d. per box; Plums—Early Prolific, 12/- per sieve; French Royals, 12/- per pack; Melons, 24's, 10s. 6d., 36's, 14/-; Grape Fruit (California), 40/- to 45/-; Oranges (South African), 24/- to 28/-; New Zealand Sturmer Pippins, 20/- to 22/-; Australian, 15/- to 17/-; Lemons, 16/- to 20/-; Strawberries were scarcer, and advanced to 1/6 per lb. for table quality, and 9d. to 10d. for preserving.

There was a glut of Tomatoes which was accompanied by a sharp decline in values. Up till Friday Scotch were only worth from 3½d. to 5d. per lb.; English, 3d.; Guernsey, 2d. and 2½d.; and Dutch, 1½d. to 1½d.; but prices recovered on that day when Scotch made 5d. to 8d.; English and Guernsey, 4d. and 4½d. and Dutch, 3d. and 3½d. Cucumbers ranged from 2/6 to 6/- per doz.; Lettuce, 1/6 to 2/-; Mint, 2/6 to 3/-; Mushrooms, 1s. 6d. to 1/9; French Beans, 4d. to 6d.; Marrows, 6/- per pot; and Capsicums, 6/- per box.

TRADE NOTE.

SALESMEN (HORTICULTURAL PRODUCE) BILL.

THE following is a draft of a Bill now under the consideration of the Ministry of Agriculture's Horticultural Advisory Council.

1.—(1). Any person who as Auctioneer, Commission Agent or otherwise shall sell any vegetables, fruit, flowers or plants on behalf of the owner or consignor thereof shall as soon as practicable after the sale deliver by post or otherwise to the owner or consignor an account containing the following particulars:—

- (1) The price paid or agreed to be paid by each purchaser for the goods purchased by him, and where several purchases are made by one purchaser the price paid or agreed to be paid in respect of each purchase;
- (2) the commission or other charge made by the seller for selling the goods or for services connected with the sale; and
- (3) the amounts (if any) paid by the seller on behalf of the owner or consignor in connection with the sale, with the details thereof

and shall enter such particulars in a book available for inspection as provided by this Act.

(2).—If the seller or any person on his behalf purports to purchase goods delivered or consigned to him for sale this fact shall be stated in the account sent in pursuance of this Act.

(3).—If any person fails to deliver to an owner or consignor the account required by this Act to be so delivered or delivers an account in which the particulars hereby required to be stated in the account are false or fails to enter correctly the said particulars in a book as required by this Act he shall be liable on summary conviction to a fine not exceeding twenty pounds for a first offence and not exceeding one hundred pounds for any subsequent offence.

2.—Any owner or consignor of goods in respect of which an account has been delivered under this Act may, on giving reasonable notice to the seller by whom the account is delivered, at any time within ten days after receipt of the account inspect either personally or by an accountant any books, invoices, sale notes or other documents in the possession of the seller so far as they relate to the goods to which the account relates, and if the seller shall refuse such inspection or shall hinder such inspection by parting with, destroying, or obliterating any such document or any entry therein he shall be liable on summary conviction to a fine not exceeding twenty pounds.

CATALOGUES RECEIVED.

R. H. BATH, LTD., The Floral Farms, Wisbech.—Bulbs.

E. P. DIXON AND SONS, LTD., Paragon Square, Hull.—Bulbs.

JAMES CARTER AND CO., Raynes Park, S.W. 20.—Bulbs and Lawns.

YOKOHAMA NURSERY CO., LTD., Craven House, Kingsway.

W.C.—Nursery Stock.

Foreign.

C. G. VAN TUBERGEN, JUNR, Zwaneburg Nurseries, Haarlem.—Bulbs.

W. ATLEE BURPEE CO., Philadelphia, Pennsylvania.—Sweet Peas and other flower seeds.

THE

Gardeners' Chronicle

No. 2016.—SATURDAY, AUGUST 15, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 61.5.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 12, 10 a.m. Bar. 30.2, temp. 63°. Weather, Overcast.

THERE may be Lilies more stately and more splendid than the Madonna Lily (*Lilium candidum*), but there is none which is more welcome in our gardens. Easy to grow, indifferent to soils—at all events within wide limits—thriving equally well on lime-stone soils and soils free from lime, the Madonna Lily when allowed full sunshine and where it takes in kindly fashion to the garden is one of the best of plants. Where it grows painfully the gardener is apt too soon to be discouraged. Yet were he to give it a chance elsewhere the Madonna Lily would probably flourish with him as it does in the best of cottage gardens. The United States Department of Agriculture which extends its sagacious scrutiny to all things that grow has recently issued a *Bulletin** on the subject of the cultivation of *Lilium candidum*, which contains much information useful to gardeners as well as to commercial growers. According to Mr. Griffiths, the author of the *Bulletin*, there are few plants which are so readily propagated as is the Madonna Lily. Each of its outer scales, if properly treated, may be made to produce a bulb which will flower in the course of two or three years; the main stem, if twisted out of the bulb at flowering time, may be "layered" in leafless lengths of eighteen inches; or, if left attached to the plant,

the whole leafy main stem may be layered with the result that there arises at its base a cluster of bulbs which in due course throw up flowering stems. Nor—at all events in America—is the raising of seed a matter of difficulty, although according to Mr. Grove, our authority on all Lily lore, *L. candidum* is generally shy of setting seed in this country. Yet this defect is apparently remediable. At all events Mr. Griffiths finds no difficulty in obtaining good seed provided that the plant is aided to help itself. Left alone it generally fails to produce seed, but if its own pollen be dusted each day, early in the morning, on the viscid stigmas, seed in plenty is produced. Even though the pollen be scarce seed may still be obtained, for, according to Mr. Griffiths' somewhat surprising observations, the pollen of the Easter Lily (*Lilium longiflorum*) serves no less well than its own pollen to induce seed formation in *L. candidum*. The information, which is new to us, is curious and deserves the investigation of the botanical microscopist. It suggests, indeed, that *L. candidum* may belong to the small class of pathenogenetic plants which are able to produce fertile seed without the conjunction of pollen and egg cell and yet require for the work of seed production the stimulus which follows from the deposition and partial growth of pollen grains on and in the stigma. Unless this be the explanation we are at a loss for one, for Mr. Griffiths states that the seed produced when *L. longiflorum* pollen is used gives rise to true *Lilium candidum* plants. A parallel to this interesting case is known among Orchids, in which strange order of plants *Zygopetalum Mackaili* when pollinated with pollen from Orchids of other genera sets seed which breeds true to type. But to return to the Madonna Lily and its vegetative propagation. Mr. Griffiths insists that if propagation by bulb-scales is to be practised the work must be undertaken at the right time. Inasmuch as it is important that bulblets should be produced and rooted before winter comes, the parent bulb should be lifted early, for example, when the plant is in full blossom, or at all events as soon as the flowers have faded. The bulb denuded of its bulb-forming outer scales may, of course, be replanted. The scales are either planted two inches deep in well-drained dry soil or laid on sand in an outhouse or under the staging of a greenhouse. In any case the essential is to allow the callusing of the scale and the formation of the young bulb to take place in soil or sand that is well on the dry side. Moisture sufficient to encourage ordinary growth is too much for the regeneration process and leads to the rotting of the scales. If propagation in sand is practised water must be provided after callusing has taken place—that is, in about two weeks time; but even then the watering must be light. Thus root-growth is encouraged and when that has begun the bulbils are planted out, say in September or October. By this latter method the bulbs may show leafage before winter comes and thus a year may be saved. If time be no object propagation may be deferred to the autumn, for according to Mr. Griffiths although it is usual to insist on the early planting or transplanting of the bulbs of Madonna Lily, the plant is really tolerant of disturbance at any time, an observation which, however, would not seem to conform with experience in this country. Where layering of the basal part of the flowering stems is practised it may be done in a manner similar to that employed

for the scale leaves—either by planting shallowly in soil or on the surface of sand. Anyone who desires to encourage the multiplication of his established clumps may do so by heeling in the flowering stems so that their bases to the extent of a foot or so are covered with from one to three inches of friable soil. In this method the whole stem with attached leaves is used, whereas when stems are used in the former method they are twisted out of the bulb, their leaves stripped off and suitable lengths taken for propagation. Similar methods of propagation are recommended for *L. testaceum* (Nankeen Lily) reputed to be a hybrid between *L. candidum* and *L. chalcedonica*. Mr. Griffiths' experience leads him to conclude that where failure in growing *L. candidum* is experienced it may be traced to planting in too heavy a soil or in excess of shade or planting too deeply. A sunny border of sandy loam with its bulb shaded is the ideal home for *Lilium candidum*; so, in sun-lit fields of Palestine, grew and yet grow the Lilies "that Solomon in all his glory was not arrayed like one of these."

Edinburgh International Show.—The secretary informs us that the arrangements for the International Show of the Royal Caledonian Horticultural Society, which is to be held on the 9th, 10th and 11th of next month in the Industrial Hall, Annandale Street, Edinburgh, are well advanced. The show will be opened on Wednesday, 9th September, at 2.30 p.m., by Her Royal Highness the Duchess of York, and it is anticipated that Lord Elphinstone, the honorary president, will occupy the chair. So many applications for space for trade exhibits have been received that the area allocated for this section will be taxed to its utmost capacity, and the council of the society has been obliged to refuse further applications. It is too soon to say anything regarding the competitive exhibits for which the final date for entering is 26th inst., but as the prizes offered are on a liberal scale it is anticipated that there will be good competition. The Industrial Hall is admirably suited for a show of this kind. It had a capacity of nearly two acres with ample light and air space. It is situated about half-a-mile north of the Waverley Station (L.N.E.R.) and about one mile north-east of the Caledonian Station (L.M.S.), at the west end of Princes Street. The L.N.E.R. and L.M.S. goods stations in Leith Walk are both within a reasonable distance.

French Cider Apples.—The Ministry of Agriculture and Fisheries has been informed that owing to unfavourable weather conditions and to a plague of caterpillars the cider Apple crop in the Nantes district of France is likely to be a complete failure, and it is not expected therefore, that there will be any surplus for export to the United Kingdom. In the Departments of Seine Inferieure, Eure, Calvados, Orne and Manche it is said that the crop will be below average, though the quality will be good. It will only be possible to export a small quantity of cider Apples from these districts to the United Kingdom this year.

Manchester and North of England Orchid Society at Southport Show.—This Society will hold a meeting at Southport on Wednesday, the 26th inst. (the opening day) in connection with the Southport Flower Show. The Committee will sit at 12 o'clock noon, and the Society's Awards will be granted to any worthy Orchid exhibit in the show. A two-tiered stage on tables will be provided, and conveyances will meet the trains to convey exhibits to the ground and return in the evening. Members are asked to communicate with the Secretary, Mr. H. Arthur, signifying their intention to be present and the extent of space required as early as possible, so that the necessary arrangements can be made and tickets of admission forwarded.

* *The Madonna Lily.* By David Griffiths, Horticulturist, Bureau of Plant Industry, U.S. Department of Agriculture. *Bulletin* 1331. May, 1925.

Cup presented to Mr. Robert Duthie.—During the war the vines at the Viceregal Gardens, Phoenix Park, Dublin, were removed but fresh ones were replanted last year, and the first bunch of grapes from these has been cut this season. In recognition of Mr. Duthie's success His Excellency the Governor-General has presented him with a silver cup bearing the inscription "Presented by His Excellency, T. M. Healy, K.C., First Governor-General of the Irish Free State, to Robert Duthie on the occasion of his cutting the first bunch of Grapes from vines planted by him in February, 1924. Viceregal Lodge, July 17th, 1925."

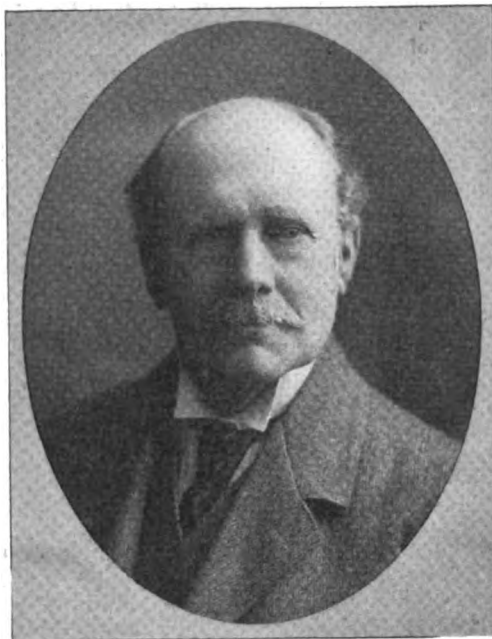
Scholarships for Agricultural Workers.—The Ministry of Agriculture and Fisheries announces the following awards under the scheme of scholarships and maintenance grants for the sons and daughters of agricultural workmen and others:—*Class I.* (for three or four years at University Departments of Agriculture):—Frederick C. Bawden (Okehampton, Devon), Hubert R. Catchpole (Whitlingham, Norfolk), Robert F. Edwards (Castle Acre, Norfolk), Martha J. Graham (Brampton, Cumberland), William E. Gelling (Crosby, Isle of Man), Frederick W. Munnings (Sleaford, Lincolnshire), Audrey M. Polgreen (St. German's, Cornwall), Edwin R. Wallace (Keswick, Cumberland), Kathleen Woolnough (Rayleigh, Essex). *Class II.* (for two years at an Agricultural College):—Charles E. Bland (Arundel, West Sussex), Charles V. Carter (Wellington, Salop), Stanley A. Child (Tawstock, Devon), John A. Evans (Carno, Montgomeryshire), Hilda M. Hatchwell (Newton Abbot, Devon), Norman P. Jones (Bethel, Carnarvon), Walter R. Penman (Ryton-on-Tyne, Durham), Mary A. Steel (Billingboro', Lincolnshire), Raymond Tamblyn (Scorrier, Cornwall), George Wells (Saxtead, Suffolk). *Class III.*—111 scholarships have been awarded for short courses at Farm Institutes in agriculture, dairying, horticulture and poultry-keeping. The number of applications for scholarships received was 493.

Gladiolus Show at R.H.S. Hall.—For the convenience of amateur exhibitors unable to attend the Gladiolus show at the R.H.S. Hall, Vincent Square, Westminster, on August 25th, Mr. A. J. Macself (a member of the Committee) has kindly undertaken to stage their exhibits and these should arrive at the Hall on the evening of August 24th addressed as follows: A. J. Macself, Gladiolus Show, R.H.S. Hall, Vincent Square, Westminster, S.W.1. The name and address of the competitor, with Class numbers should be enclosed in each box. The Hon. Secretary, Mr. A. E. Amos, will be pleased to send copies of the schedule to intending exhibitors upon request; his address is 10, Bergholt Road, Colchester.

Protection of Wild Flowers.—The Society for the Promotion of Nature Reserves, of which Lord Ullswater is President, has issued an appeal to the county councils for the protection of wild flowers, by the issue of by-laws or in such other ways as may seem desirable to them. The appeal states that "much of the damage is due to thoughtlessness and ignorance, and good results might be obtained if notices requesting the public not to pick the flowers or remove the plants were placed in suitable places and if also in such districts the children in the schools could be instructed in the harmfulness of heavily picking flowers or removing plants. It might be desirable in certain instances to constitute reservations for the protection of rare species. The council respectfully commends the above suggestions to the consideration of the several county councils, which are so concerned with the welfare and education of the people of Great Britain." The hon. secretaries of the Society for the Promotion of Nature Reserves are Dr. Herbert Smith, secretary of the Natural

History Museum, Mr. F. R. Henley, and Mr. E. G. B. Meade Waldo, and the executive committee includes Lord Buxton, Dr. F. G. Dawtrey Drowitt, Dr. G. Claridge Druce, Lord Grey of Fallodon, Professor F. W. Oliver, Sir David Prain, and Lord Rothschild.

Mr. Thomas Peed.—Mr. Thomas Peed, senior partner of the firm of Messrs. John Peed and Son, Nurserymen and Seedsmen, is well known in the horticultural world. He was born in 1857 and has been connected with the business, which was founded by his father, the late Mr. John Peed, practically all his life. The firm has nurseries at Streatham, Norwood and Morden, Surrey, where nursery stock of all kinds is cultivated for sale, and with what success may be gathered from the fact that Messrs. Peed and Son won no fewer than nine gold medals at important exhibitions last year and were awarded the Jubilee Trophy at the Shrewsbury show for one of the six finest exhibits in the show. *Caladiums* are the chief



MR. THOMAS PEED.

speciality of the firm, and these beautiful leaved exotics have been grown and exhibited by Messrs. Peed and Son for a great number of years, their imposing exhibits of these plants being prominent features at exhibitions up and down the country. Mr. Peed was for many years a member of the R.H.S. Floral Committee, but in recent years owing to advancing age, he has been obliged to relinquish some of his engagements and, although he is still an occasional visitor to the R.H.S. meetings, he is not now a member of the committee. He has occasionally contributed articles to these pages, especially during times when he has been on holiday, when he has taken the opportunity of visiting interesting gardens and nurseries. In 1902 he visited South Africa, and in his tour of inspection included the Botanical Garden, Cape Town, and some of the more famous gardens in that district. Two of Mr. Peed's sons assist him in the management of the business, Mr. John Osborne Peed, being manager of the Roupell Park Nursery, West Norwood, and Mr. Stanley H. Peed, manager of the nursery at Morden, Surrey.

The French Pear Crop.—The Ministry of Agriculture and Fisheries has been informed that in the Canton of Gaillon (Eure), France, the Pear crop this year is very poor and amounts to only about one-tenth of the average for a normal year. Exports, which

usually amount to 500 metric tons per annum, are expected to be very small this season.

Annual Outings.—On Wednesday, the 5th inst., the members of the Ipswich and District Gardeners' and Amateurs' Association and Ipswich and East of England Horticultural Society visited the nursery and trial grounds of Messrs. Sutton and Sons. The tour of inspection included visits to the seed warehouses, packing and order departments, and the trial grounds in the London Road nursery. The plants, both under glass and in the open, in the trial grounds and nursery proved of great interest to the visitors, who were kindly entertained to tea by Messrs. Sutton and Sons.—The annual outing of the Reading and District Gardeners' Mutual Improvement Association took the form of a visit to Tewin Water, Welwyn, the residence of Sir Otto Beit, Bart. The members journeyed by charabancs via Maidenhead, Slough and St. Albans, to Hatfield, where luncheon was provided. Mr. H. Lloyd, the gardener, conducted the visitors through Tewin Water Gardens, where everything is maintained in a high state of perfection. The party returned to Hatfield for tea, and the President, on behalf of the members, passed a hearty vote of thanks to Sir Otto Beit and to Mr. Lloyd for the pleasure they had received at their hands.—The staff of Mr. Amos Perry, hardy plant nurseryman, Enfield, journeyed to Southend-on-Sea on the 8th inst., on the occasion of the firm's annual outing. The journey to Southend was made by charabancs and lunch was served at noon at the Granville Hotel. Mr. Amos Perry returned especially from the Continent to be present at the outing. The party returned to Enfield about 10.30 p.m., after having spent a most enjoyable day.—The members of the Guildford and District Gardeners' Association recently visited Messrs. James Carter and Co.'s nursery at Raynes Park, on the occasion of the Society's annual outing. Special interest was taken in the seed-testing department, the seed-packing department, the laboratory and the machines for cleaning seeds. Messrs. Carter and Co. provided tea for the visitors, at which the President, Alderman W. T. Patrick, J.P., expressed the thanks of the visitors for the kindness extended to them by Messrs. Carter and Co.

Potato Trials in Scotland.—The Board of Agriculture for Scotland carries out annually at its Plant Registration Station at East Craigs, Corstorphine, a very comprehensive trial of Potatoes. The first inspection for the season took place on July 29, when over eighty growers, merchants and others interested attended. The area occupied by the trials at East Craigs is eight acres, and over two thousand five hundred distinct trials are conducted. In addition to these one thousand seven hundred trials have been planted in a wart infected field at Philipstoun. An interesting section of the work at East Craigs is the area planted for the purpose of training inspectors. There are forty-two plots of commercial stocks of common immune and non-immune varieties; and again there are forty-two plots of common varieties, immune and non-immune, each plot containing some common "rogues." Seventy-two temporary inspectors are employed in addition to the permanent staff of the Board. The temporary inspectors are only appointed after having passed a very stiff examination in the field plots at Philipstoun and East Craigs. This year some sixty thousand acres have been entered by the Scottish growers for inspection. The meeting on the 29th ult. was engaged in an inspection of the growing crops only, it being too early to raise any of the roots. Mr. Adam Miller, B.Sc., Assistant Director of the Station, conducted the company round the plots. A seemingly endless number of varieties had been sent in, but the interest was greater in the second and third year trials, these being of varieties which had been selected by the officials in the two previous years. In many of the latter, traces of mosaic disease and leaf curl were to be found, but on the other hand, quite a number stood out as being so far resistant to these troubles. Great interest was manifested in

the plots where bolters, wildings, varieties with fasciated stems, and other "freaks" were growing. It was conclusively approved that these variations once they occur are persistent and ought to be remorselessly removed from growing crops for seed. This great work is being carried out by the Scottish Board of Agriculture for the purpose of helping growers and merchants alike to further improve the growing of Potatoes for seed in Scotland. The later inspections will be more interesting, as visitors then will be able to see what the crops are like as a number of representative roots are lifted in each case. In the first year trials the most promising seedlings have been submitted by Mr. D. Mackelvie, Messrs. McGill and Smith, Messrs. Alexander and Brown, Messrs. Dobbie and Co., Ltd., and Mr. W. A. J. Main.

Cherry Exhibition at Altenburg, Germany.—

The exhibition of Cherries held at Altenburg on July 4, attracted a great many entries. It was formally opened in the presence of a distinguished company, including representatives of the Thüringian and local authorities. Cherries are difficult fruits to arrange artistically, and in this respect, as also in the labelling, something was left to be desired, the general effect being flat and uninteresting. Some vases of tall, bold flowering plants would have been a relief. The varieties were mostly shown under local names, and the number of different names used was astonishing—so much so that it was felt by many present that some at least of the titles must have been synonyms, and that it is time that the nomenclature of German Cherries was placed on a sound basis. This, however, would take a considerable time, as the elimination of separate names for mere climatic variations would involve growing the different kinds in different places under test conditions. Much excellent work in this direction has already been done by Herr Heimann, of the experimental orchards at Diemitz, Halle; but his efforts have not been sufficiently appreciated by the fruit-growers as a whole.

Proposed Garden City in Scotland.—A company has been formed for the purpose of founding a garden city in Scotland on lines somewhat similar to Letchworth and Welwyn in England. The promoters of the scheme are a group of well-known people of the professional class in Glasgow, and while a site has not actually been determined upon, preliminary expert investigation has been made of the estate of Killiarn, near Loch Lomond, which is said to offer many conveniences for a town planned for industry and healthy living and surrounded by a permanent belt of rural land to be held in trust for the community. It is claimed that this garden city will aid powerfully in the solution of the problems with which Glasgow is faced in respect of housing. The Prime Minister has expressed sympathy with the scheme, and Mr. Neville Chamberlain, Minister of Health, states that he has long been a believer in the future of garden cities as an alternative to the huge aggregation of houses and people which have presented so many difficult problems in big cities.

Rose Doris Trayler.—This new Rose (Fig. 45), received the National Rose Society's Certificate of Merit when exhibited by Messrs. S. McGredy and Son at the Society's provincial show held at Bath on July 8th and 9th. It is a Hybrid Tea variety of old gold colour with the bases of the broad petals lightly flushed with peach-pink, a delightful combination of shades. As the flowers are deliciously fragrant, of good form and especially pretty in the bud stage, the variety should prove a valuable addition, especially for garden purposes. A plant of the variety exhibited at the Bath exhibition showed that the habit is sturdy, the leaves robust and with a shiny surface, so that it is not likely to be very susceptible to mildew. Roses of yellow shades are great favourites with most growers, and if this new variety fulfils its promise in the garden it has a great future before it.

Appointments for the Ensuing Week.—Tuesday, August 18: Winchester Horticultural Society's Meeting; Wednesday, August 19: Shropshire Horticultural Society's Show (two days); Derbyshire Horticultural Society's Show; Royal Horticultural Society of Perthshire's show (two days); Banff Flower Show; Biggar Flower Show. Thursday, August 20: Appin Flower Show; Carnworth Flower Show. Friday, August 21: Montrose Horticultural Society's show (two days); London and North Western Horticultural Society's show at Manchester; Blairgowrie Flower Show (two days); Carnoustie

produced before us proof that while disease largely exists there in fields where sound sets were employed, there is no disease at present where diseased sets were purposely selected for trial. The following are instances: (1) Very much diseased sets of Ash-leaved Kidneys were planted on the 18th March, in drills five inches deep. These were taken up sound and ripe on the 2nd of August *without disease*. (2) Very rotten late Potatoes were planted November, 1849, six-and-a-half inches deep, covered first by two inches of earth, then by a layer of half-decayed weeds and lastly by earth; taken up in the beginning of August *without*

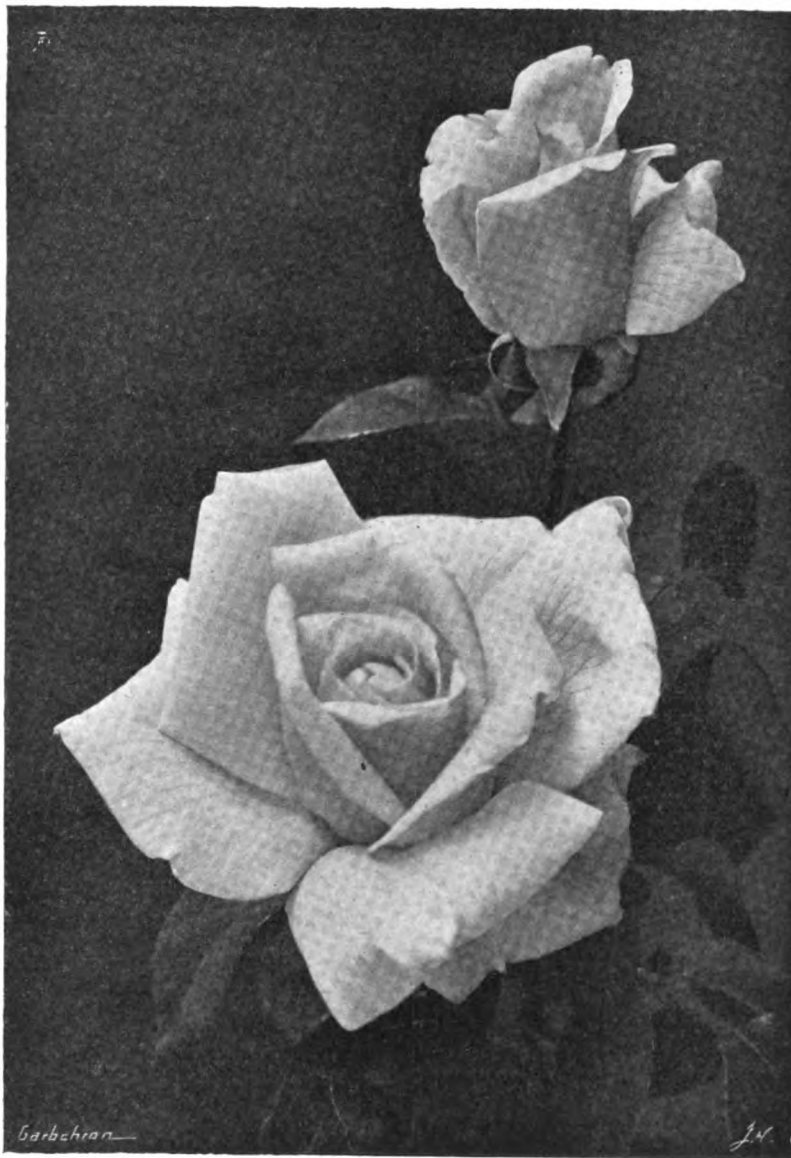


FIG. 45.—ROSE DORIS TRAYLER.

N.R.S. Certificate of Merit, July 8. Shown by Messrs. S. McGredy and Son.

Flower Show (two days): Forfar Flower Show. Saturday, August 22.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Diseased Potatoes.*—Among other opinions which the present season has confirmed is the very curious and important one that diseased Potatoes may be safely and advantageously used for seed. Several cases of sound Potatoes having been obtained from rotting sets, were mentioned in our volume for 1846; instances were even mentioned where the crop thus raised was better and more abundant than where sound Potatoes had been carefully planted; and this year a similar, but more conclusive case has occurred. Mr. Benjamin Smith, of Wokingham, has

disease. (3) Very bad sets planted in March, as before; taken up in the beginning of August, *without disease*. In this case each set produced about seven sound Potatoes. (4) Sound sets of Ash-leaved Kidneys and others, a mixed lot, were planted in February as before. Taken up in August, were found to be *much diseased*. In all the neighbourhood the disease has spread much, except where the rotting sets were used. *Gardeners' Chronicle, August 17, 1850.*

[Growers will naturally ask whether the difference was due to later lifting of the undiseased sets. In any case they are not likely to repeat the experiment, although those engaged in the scientific investigation of plant disease might well do so.—EDS.]

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Miltonia.—Through the introduction of numerous hybrids from these popular Orchids the flowering period has been greatly extended, but the majority of plants will by now have passed that stage. *Miltonias* are restless Orchids, frequently starting into growth afresh after a very short rest following the completion of their pseudo-bulbs. This month is the most suitable for repotting them, and the work is best done so soon as new growth commences. In order to keep them in good health and vigour, it is necessary that they should be provided with fresh material at least every two years. Some may require larger pots, others may need to be divided and placed in smaller receptacles. They are not deep-rooting plants, therefore the pots or pans should be well-drained, and in no case should they be over-potted. A good potting compost should be used, such as *Osmunda* or *Polypodium* fibre and *Sphagnum* moss in equal parts. Moderately firm potting is desirable, finishing off with a thin layer of chopped *Sphagnum* moss and *Osmunda* fibre over the surface. After being potted the plants should be staged together in a house where an intermediate temperature is maintained, and shaded from bright sunshine. The water supply during the early stages of growth is of great importance. An occasional light watering with a can to which a rose is affixed will keep the rooting material sufficiently moist, and the plants should be frequently sprayed over on fine days.

Insect Pests.—Small yellow thrips often attack the succulent young growths, and these should be kept in check by occasional sprayings overhead in the evenings with a suitable insecticide.

Bigenetic Hybrids.—The bigeneric hybrids, *Odontonia* and *Miltoniada*, are now becoming numerous, and their flowers have distinct and fine colourings. These Orchids will grow well under cultural conditions similar to those given to the *Miltonias*.

THE FLOWER GARDEN.

By W. AUTON, Gardener to Viscount ELVEDEN, Pyrford Court, Woking, Surrey.

Summer Bedding Plants.—Preparation should now be made for the propagation of the necessary stocks of plants for filling the beds next summer. Cuttings of zonal and Ivy-leaved *Pelargoniums* and single and double *Marguerites* should be secured at an early date, choosing firm, partially-ripened growths in preference to soft ones. A compost made up of equal parts of loam, leaf-mould and sand is suitable and if the cuttings are well watered in, very little more watering will be necessary until they have rooted. They should be inserted firmly in boxes and stood outside in an open position until the first indication of frost, when they should be removed to safe quarters. Cuttings of *Heliotrope*, *Verbena* and *Fuchsia* are less able to withstand open air conditions and should be given the protection of a cold frame to guard them against excessive loss of moisture through transpiration. They should not be coddled, however, but receive full exposure so soon as the roots have formed.

Border Carnations.—So soon as the layers are rooted sever them from the parent plant, leaving them undisturbed for a week or two to allow them plenty of time to make an abundance of roots. In the meantime their flowering quarters should be thoroughly prepared, adding some old mortar rubble and decayed manure, and if the soil is of a heavy nature, a liberal dressing of coarse, sharp sand. It is always wise to put a few plants

into three-inch pots and winter them in cold frames as a reserve; some growers prefer to grow their whole stock in this way. Dampness is, however, a greater enemy than frost, and in well-drained soils they do better planted out than when wintered in pots.

Mutisia decurrens.—This hardy Composite from the Chilian Andes is an attractive climbing plant. It has slender twining stems with lanceolate, glaucous leaves, from the axils of which the flower-heads are borne singly in July and August. The flower heads are of a beautiful deep orange, four inches across, like magnified stars of the veldt; the outer florets are rather long, narrow, and reflexed. The plant thrives in a good, medium loam, and should be given a position on a wall with an eastern or western aspect.

Border Chrysanthemums.—Early varieties will soon be coming into flower and should receive attention in the matter of tying or losses may occur during windy weather. Give water when necessary and keep the surface soil constantly stirred. If black fly appears keep this pest in check by dusting the foliage with tobacco powder, and syringing the plants forcibly the next day.

General Work.—Beds and borders need a good deal of attention at this season to keep them tidy and effective. Nothing is so exhaustive to plants or so shortens their flowering life as the carrying of seed-vessels, hence every effort should be made to remove all flowers as they fade. Any plants which show signs of exhaustion should have their root area sprinkled with Clay's Fertiliser or some other quick-acting fertiliser, worked into the surface of the soil and watered in. Keep the borders free from weeds, the edges neatly trimmed, and ply the hoe frequently amongst young plants being grown on for autumn planting.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. Sir GEORGE HOLFOED, Westonbirt, Tetbury, Gloucestershire.

Winter-flowering Begonias.—*Begonias* of the *Gloire de Lorraine* type raised from cuttings rooted late should be transferred to their flowering pots during this month, as also those of the tuberous-rooted sections, of which *Optima*, *Elatior* and *Mrs. Heal* are examples. Afford the plants accommodation in a warm house with a moist atmosphere, closing the house early in the afternoons for a week or two, to encourage them to make free growth. Earlier propagated plants, now growing freely in the pots in which they are intended to flower should be afforded somewhat cooler conditions than hitherto, ensuring a free circulation of air on all favourable occasions. Syringe the spaces between the pots, also the floor and walls of the house several times daily during warm weather, and maintain a steady circulation of warmth in the water pipes at night and during dull days.

Perpetual-flowering Carnations.—Plants which were placed in their flowering pots last month are now growing freely and require frequent attention in the matter of supporting their growths, particularly if the ordinary practice of staking and tying is resorted to. If permanent stakes or other supports have not already been affixed, I would advise the use of a wire support such as made by Messrs. Allwood Bros. One stiff, smooth Bamboo stake, placed in the centre of each pot to which the wire supports may be easily and readily adjusted, is sufficient. The supports are procurable in various sizes, and, if necessary, they may be reduced in diameter at will to suit the needs of the different plants, and the method of adjustment is so simple that they are easily moved up or down the stakes as required. The saving of labour in tying which is obviated by their use will more than compensate for the cost of the supports.

Seed - Sowing.—The present is a suitable time to sow seeds of *Mignonette* in pots for next winter's flowering. Pots of six inches diameter are the most suitable. These should

be well-drained, and be three-parts filled with a compost of three-fourths strong fibrous loam, one-fourth of well-decayed manure from an old hot-bed, with a free addition of old mortar rubble and a little soot. Sow four or five pinches of seed in each pot and lightly cover them with finely-sifted soil. Water the seeds with a fine-rosed can and place the pots in a cold frame where the seed will germinate well. Thin the seedlings ultimately to four or five in each pot. Seeds of *Schizanthus* may also be sown now to raise plants for flowering next spring. Two-and-a-half-inch or three-inch pots should be employed, filling them with a light mixture of loam, leaf-mould and sand. Sow a few seeds in each pot, and germinate them in a cold frame. When the young plants are large enough to handle, all but one seedling should be removed. Grow the young plants on in a cool position, either in a cold frame or on a shelf near to the roof-glass in a cold house until they are ready to be transferred to larger-sized pots.

Hard-wooded Plants.—*Camellias* growing in portable tubs and pots should have so far developed their new leaf-growth as to warrant their removal to outside quarters in order that the new wood may become thoroughly matured, a condition which is essential to the formation and proper setting of their flower buds. The same remarks apply to greenhouse *Rhododendrons* and *Azaleas*. A partially shaded position would be desirable for the plants for a time, until the new growths get a little hardened, or, if placed in an open, sunny situation, some temporary shading against strong sunshine should be provided.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Apricots.—These are now ripening their fruits and will need protection against birds, wasps, and earwigs. String netting, not larger than one inch mesh, will suffice against birds. When wasps attack the fruits the best thing to do is to watch which way they fly, track them to their homes and place some cyanide of potassium in the hole of the nest. After a few hours dig the nest out and destroy the wasps. For earwigs the best traps are Bean stalks placed about the trees or on the ground, close to the stems; these should be examined daily and the trapped insects blown into a jar of paraffin. For woodlice halve some large Potatoes, scoop the centres out and place them about near the stems of the trees. Ripe fruits for dessert should be carefully taken from the trees a few days before required and put into a dry, airy fruit room, especially as the weather is unsettled; for other requirements there is no need to be quite so particular.

Early Peaches.—These will need the same care and protection as Apricots. Should the weather be dull and the fruits fail to ripen so quickly as they are required, pick the most forward specimens and lay them on wood wool in a vinery where the Grapes are ripening; the warmth and air admitted for the Grapes will improve the Peaches. If the weather is favourable allow the fruits to remain on the trees until ripe enough for gathering.

Morello Cherries.—Where these are required for bottling care should be taken not to bruise the fruits; a pair of scissors is useful for cutting them from the branches; lay the Cherries on tissue paper in a flat box or basket. For preserving, less trouble need be taken.

Early Dessert Apples.—Beauty of Bath, Irish Peach, Gladstone, Langley Pippin, and other early Apples are best eaten as gathered from the trees; if stored only for a few days they lose flavour. Early cooking Apples such as Early Victoria and all the early Codlin type, are much better flavoured when used as soon as they are taken from the trees.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Apple Trees in Pots.—Apple trees in pots that are ripening their fruits will be much improved if they are carefully moved out of doors, under a fruit cage for preference. Plunge the pots to keep the trees from being blown about by wind and continue to give water to the roots and also weak stimulants when necessary to give the fruit a fine flavour and perfect finish. It is advisable to tie each fruit by the stem with a piece of wide raffia and attach the latter to the branch above, to keep the fruit from falling and thus being spoilt. Sometimes a piece of fish netting is used to form a bag to hold the fruit, but this often leaves the mark of the netting on the skin and rather spoils the appearance. When the fruits are required for exhibition purposes great care must be taken not to handle them so as to disturb the bloom.

Apricots.—When the crops have been gathered give the borders a thorough soaking of clear water. Examine all ties to see that none is cutting into the bark. Tie in all the leading shoots and pinch back any surplus growths. Keep the ventilators wide open day and night. If red spider is present thoroughly syringe the trees with nicotine insecticide.

Late Vineries.—With the present unsettled weather a sharp watch must be kept on all late Grapes, especially those just starting to colour. Keep the hot-water pipes warm and allow a free circulation of air at all times. A sudden burst of bright sunshine will raise the temperature rapidly and cause the berries to crack, therefore a little ventilation should be left on all night, gradually increasing the amount in the early morning. When the borders require watering choose a fine day and apply the water early so as to allow the atmosphere to dry before nightfall. Grapes that are nearly ripe will require an abundance of air. Prevent attacks of wasps by the use of fine tiffany placed over the ventilators.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE
Polesden Lacy, Dorking.

Cabbage.—Ground that has been cleared of early Potatoes should be made ready for the first planting out of Cabbage for Spring use. There should be no hurry for another week to put the plants in their final quarters, but if the bed is prepared beforehand, advantage can then be taken of the first opportunity that occurs for planting on a showery day or after a wet day. Planting out when the ground is moist enables the plants to get a good start before wintry weather sets in.

Early Onions.—The early batch of Onions raised from seed sown under glass in January and pricked off and planted out in April, are now making large bulbs. Those intended for late autumn shows should be very carefully watched. Where necessary, it is well worth the little extra time to stake and tie the plants securely as the winds may do great damage to them. Keep the ground well-hoed and afford water if necessary. Remove any loose skins on selected bulbs as this will be found beneficial when making a final selection preparatory to cleaning them off for show purposes.

Salads.—Keep a close watch on salad plants so that there will no break in the supplies of fresh material. Sow Radishes and Mustard and Cress often, according to the demand. Keep Lettuces outside and those in frames growing steadily, never allowing the plants to suffer from lack of water. Prick out more seedlings into frames from the thinnings of existing rows that were sown outside. Endive should now be brought along to make a change from Lettuce, and, finally, to take its place through the winter months.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE
Lowther Castle, Penrith, Westmoreland.

Violas.—Stock plants of these should now receive attention with a view to propagation in mid-September. Remove all flowering growths so as to allow the young growth every chance to become useful for cuttings by that date.

Early Potatoes.—Tubers intended for next year's planting should be lifted and, after being thoroughly dried, stored away in boxes; place the tubers in rows, rose end up, in the boxes. A cool, dry shed is a suitable place for storage for the present, but later, when frost threatens, sufficient dry material must be provided to ensure safety.

Cabbage and Cauliflowers.—The present is a very good time to make a sowing of these to provide plants for spring planting. In exposed northern gardens I advise sowing the seed thinly and broadcast in an open frame; the sashes should be kept off until winter, and only then placed over the young plants as a

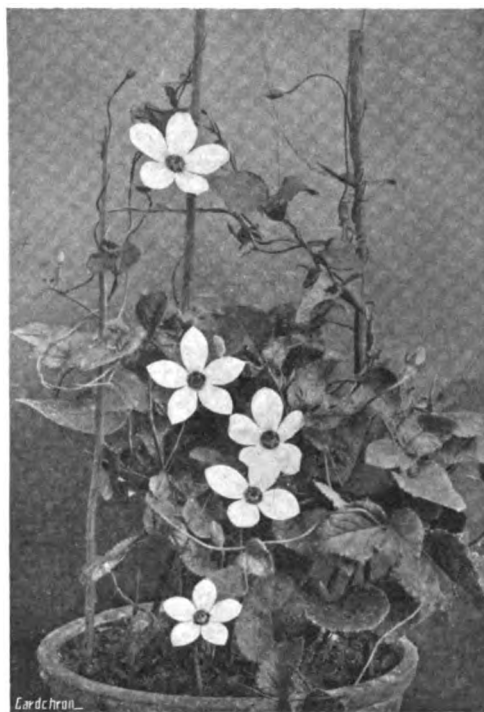


FIG. 46.—CODONOPSIS FORRESTII
(see p. 128).

protection from snow or during very exceptionally severe weather. The best varieties of Cabbage for this sowing are Ellam's Early and Flower of Spring. From Cauliflowers sown now I have had the best results from Early London and All the Year Round, both varieties being hardy and reliable.

General Remarks.—Attention should be paid to all flower beds and borders with a view to maintaining them at their best so long as possible. Remove faded flowers and discoloured foliage, taking care to pull any weeds that may have been missed previously. Mildew may appear on Roses after the break in the weather, therefore no time should be lost in spraying affected plants with a suitable wash so soon as the disease is noticed. Select a dull afternoon for spraying. Continue to tie in young shoots of rambler Roses, removing at the same time all spent flowering trusses. Border Chrysanthemums are now growing rapidly and require to be frequently tied. In some cases stronger supports may be found necessary to make them secure against strong autumn winds. As most bedding plants are now at their best, the present is a most suitable time to arrange for next year's colour scheme.

HARDY FLOWER BORDER.

PYRETHRUMS.

The single and double varieties of the florists' Pyrethrum are amongst the earliest of the hardy Composites to flower, and they are grown in quantity by market growers who find them a remunerative crop. Pyrethrums require a deep, strong, well manured soil. In poor, thin soils they quickly deteriorate and die. When grown for supplying cut flowers they are best planted in beds about six feet in width for convenience in gathering.

There is a wide range of colour in the flowers, including shades of pink, rose, cherry, peach, carmine, buff, salmon, crimson, scarlet, and white. Some sorts have a zone of contrasting colour around the disc.

After the first crop of flowers is past the plants should be cut over, when they will flower for a second time. Many of the older single sorts still hold their own, the greatest advance having been in the double, and Anemone-flowered sections. Pyrethrums are readily raised from seeds and the seedlings, if given generous treatment, form strong plants for flowering in their second season. *Fred W. Jeffery.*

ASTILBE HYBRIDA BETSY CUPERUS.

HYBRID Astilbes include some magnificent plants and, when suitably placed, they are remarkably fine in effect. In the grounds of Argaty, Mrs. Hope Henderson's beautiful home near Doune, Perthshire, a charming glen called "The Dene" has in summer a most delightful feature in the form of a large group of these hybrid Astilbes, where the shade and moisture seem to suit them admirably. Looking up the glen towards the Astilbes the picture seems perfect; the elegant plumes of flower, rising irregularly among the greenery of the trees and by the water, are truly exquisite. Betsy Cuperus is one of the best of the varieties, rising six feet and more, with white flowers that have pink centres. *S. Arnott.*

PHYTOLACCA.

For large herbaceous borders or for planting in isolated positions in the front shrubberies, few plants are more decorative than *Phytolacca acinosa*, a Himalayan species.

When established, this plant produces branching stems furnished with very ornamental, spreading foliage. The delicate pink or rose-coloured flowers are produced in racemes from the leaf axils during July, and are followed by clusters of reddish-purple berries.

Phytolacca decandra is a native of Virginia, and is very ornamental on account of its purple-black berries which follow the racemes of white flowers. *Phytolaccas* thrive in any deep, well drained soil. *W. Logan.*

PHLOX DECUSSATA.

Young plants of Phlox growing in deeply worked land have withstood the effects of drought to a marked degree and are producing very fine heads of flowers.

It is advisable to raise a batch of these plants annually from cuttings. Cuttings root quickly in early spring inserted in sandy soil with the protection of a cool, shaded frame. A partially shaded position and a cool soil suits the border Phloxes. Similar conditions suit the growth of *Monarda didyma* Cambridge Scarlet. Large beds planted with this Bergamot intermixed with some of the scarlet and crimson Phloxes made a fine display in late summer grown under the conditions mentioned.

Some of the old varieties of Phlox have a graceful habit of growth, and the colours of their flowers are more subdued than are those of modern sorts. They are most useful for growing in the herbaceous borders. Many of the newer sorts have very conspicuous flowers, and should be given special positions in the flower garden.

A north border which is backed by climbers of very dense foliage proves a suitable site for a collection of Phloxes of brilliant colour, intermixed with a few white varieties. *C. Rose.*

ALPINE GARDEN.

CONVOLVULUS LINEATUS.

THIS most attractive little species is, apparently, not very well known, and yet it is worthy of a place in every rock garden; it is quite hardy, deciduous, and not obtrusive. The leaves are lanceolate, acute, and very silky, silvery grey in colour, and extremely pretty. The flowers are of a pale pink or reddish shade, oftentimes almost white, and produced on stems which are shorter than the leaves.

The plant spreads slowly by means of underground stems. In a well-drained, sandy loam in a high and sunny position in the rock garden it is quite at home, and it does not exceed six inches in height, and is often less.

This species was introduced from the shores of the Mediterranean in 1770, and appears never to have been very well known. It is advisable to afford the plants a little protection in an extremely damp winter.

CAMPANULA NITIDA.

THIS very striking species is not nearly so much grown as it should be. The leaves are in rosettes, leathery, of a very dark and shining green colour, oblong, and crenated; the cauline ones are linear-lanceolate and almost entire. The stem is simple, from six to nine inches tall, furnished with large blue flowers disposed in a spicate raceme.

The white variety, identical with the type, except in colouring, is a very lovely plant and should certainly be grown wherever choice plants are cherished; the flowers are large, very pure and persistent. A well-drained gritty loam and a sunny position in close proximity to stones will suit these delightful Bellflowers to perfection, while grown in a pan in the alpine house, they are delightful.

There are double blue and white-flowered forms of the species, but they are rarely seen.

POLEMONIUM HUMILE.

THIS dwarf species, rarely exceeding six inches in height, is a desirable plant for the rock garden, as it provides welcome blue colouring during June and July. The flowers are produced in drooping sub-corymbose panicles and are purplish-blue in colour. The leaves are oval, mostly radical, and possess a very faint musky fragrance. The stems are many, leafy and somewhat downy. As with all Polemoniums, the species under notice succeeds admirably in a rich and deep loam, and is of the easiest cultivation; its propagation is easily effected by division.

P. humile was introduced from the Rocky Mountains in 1827, and is figured in *Bot. Mag.*, t. 2800, under the name of *P. Richardsonii*; it has also been referred to *P. villosum*. *Ralph E. Arnold*.

TWO USEFUL COMPOSITES.

AMONG the few plants which were most successful in resisting the June-July drought on our dry rock ledges are *Chrysopsis villosus* var. *Rutteri* and *Urospermum Dalechampii*. The former is the best of an American genus of Composites not noted for their garden merit. Even the plant under notice has been described as "weedy," but its loose, shapely mass of silken silvery foliage, which is ablaze with large golden-rayed, Daisy-like flowers the summer through, and that under the most trying conditions, is most attractive. This plant appears to be quite hardy in any poor soil and sunny spot.

Urospermum Dalechampii, is the Italian Dandelion, a hairy-leaved Hawkweed, which will eventually make a wide mass of its strap-shaped, silvery leaves, above which to the height of over a foot, is borne a succession of large Dandelion flowers the summer through. These are a curiously bright yet pale sulphur-yellow, which is accentuated by a dark eye and the purple which stains the backs of the outer rays. Downy heads of pappus follow the blossoms and the seeds which usually ripen in

abundance, may be used for increase, but division is a more certain and expeditious method. *U. Dalechampii* has not to my knowledge ever become a nuisance. It is thoroughly drought-proof and easy in any hot, open site and, like the preceding, it flowers at a season when rock-garden plants are for the most part over. *J.*

BULB GARDEN.

MUSCARI MOSCHATUM.

IN writing of this Grape Hyacinth I must premise that I do not place it in the same high rank as the lovely *Muscari botryoides* in its several forms, or its allies, such as *M. conicum*, *M. atlanticum* and others of similar type of flower. It is offered in catalogues, however, and many may like to know something about it and its behaviour in gardens.

After growing practically all the Grape Hyacinths in commerce in my garden I am disposed to leave *M. moschatum* and its varieties severely alone. The reason is this, that with me and a great many others, the bulbs flowered the first year after importation, and never bloomed again. Probably our seasons are too cold for it, and it requires stronger sun and less humid summers and autumns for its welfare. It is, however, an interesting little plant, though not showy, with rounded clusters of flowers which open purple, passing to a kind of greenish yellow, which is tinted with purple. The variety *M. m. macrocarpum* is subject to the same failing as the type, but is certainly more attractive, as the flowers are larger and looser in their clusters, and are of a fair tone of pale yellow tipped with purple. There is another variety called *M. m. major*, resembling the type, but larger and finer, although of the same colour. These three have all a share of the odour which gives them the name of *moschatum*, musk-scented.

The bulbs may be procured in autumn and planted at a depth of about two inches in light soil and in a sheltered, sunny place so as to give them a chance of flowering in the second year, which they should do in very warm localities. *S. Arnott*.

LILIUM CANDIDUM.

THIS beautiful old Lily is one of these plants which appear to thrive best on neglect. Even so, there are a good many who no matter how lavishly they may squander their treatment upon it, cannot induce it to prosper as well as it does in many a cottager's plot. For this there is probably more than one reason, but there is no doubt that any disturbance of the bulbs is resented by the Madonna Lily, and where this is indulged in too freely the plant loses not only its natural vigour but its ability to resist disease. As for moving it at any other time than July or August, or so soon as flowering ceases, this is a grievous error.

A good many years' experience with this Lily has induced me to believe that it enjoys most of all old kitchen garden soil, and it should be planted in full sun. It is a lime-lover undoubtedly, and root restriction seems to lead not only to good flowering but to general health and permanence. I have, for example, had under my observation for a number of seasons several clumps of *L. candidum* which have become so congested that most of the bulbs are above the surface winter and summer, yet they flourish perfectly. This suggests that very shallow planting on a firm bed is desirable, a practice which I always adopt. On the other hand one hears of gardeners who contend that they can do nothing with this Lily unless the tops of the bulbs are at least three inches below the surface when planted. I am also aware of the fact that there are places where, though they may seem ideal, this Lily positively refuses to grow at all, the bulbs remaining for years in the soil without putting forth a leaf.

Lilium candidum is a native of south-eastern Europe and seems to have been introduced from the Levant in 1596. It is, therefore, one of our oldest garden exotics. There are several varieties, the broad-petalled, dark-stemmed form being the handsomest. *A. T. J.*

FLORISTS' FLOWERS.

BORDER CARNATIONS.

WHEN the beauty and hardiness of Border Carnations are considered it is very surprising that they are not more generally grown. In most town gardens it is the exception to see them at all, and yet their immunity from troubles due to the atmospheric conditions prevailing in towns ought to be a great point in their favour. Many people, while admiring the flowers, pass them by, and I believe too much insistence on the fact that certain essentials are necessary to successful cultivation—and which in small gardens, where a show of bloom is required every season would be impossible—may partly be the cause.

For instance, beds cannot be left fallow for a season to ensure fresh planting ground, and yellow, fibrous loam and cow manure are not to be had for the asking, but if the soil is in good condition, well-drained and not too heavy, and a liberal quantity of lime in the shape of old mortar rubble is incorporated (lime in some shape or form being an absolute necessity) there is no reason whatever why they should not be a success. Having once succeeded there will be no turning back, and the novice becomes the keen amateur, growing his plants under the most approved conditions necessary to their well-being.

Bone-meal is an excellent fertilizer and an occasional dressing of old soot is very beneficial, both as a soil disinfectant and a tonic, and a slight dusting of soot over the plants in spring acts as a deterrent to the sparrows, although a few strands of black cotton have still to be beaten in this respect. Add to these an open sunny position, waterings with weak liquid manure when the buds are swelling, firm planting and soil aeration by means of a hand fork—all very simple.

Amateurs' stumbling blocks are tying and layering. The former may now be undertaken very easily with ring-ties, and there are several patent supports if canes are considered unsightly or too much trouble, although after many trials I must confess I prefer them myself. But many people who would otherwise grow the plants have the idea that layering must be carried out every season, not realizing that Carnations are true perennials, and so they refuse to undertake the work this entails. It is, of course, not necessary to do anything of the kind, and plants may be allowed to grow unchecked, and they will give an abundance of bloom for cutting and garden decoration. Some varieties are better than others for this purpose, the old fancy Queen Eleanor being excellent, and spreading very rapidly. The foliage is fine and good, and I have had very large plants of this variety eight and ten years old. Most of the Cloves come under this heading, Salmon Clove, Coral Clove, and the crimson Spicy Breeze, being good examples.

The aim of raisers nowadays is to put nothing in commerce that does not conform to the highest standard, which means compact habit and strong healthy growth, so that when, as sometimes happens, a variety "runs away," it is often suggested that a perpetual-flowering plant may be at the root of the matter. Thus, putting aside all consideration as to the improbability, hardly satisfies, as the flower would almost certainly show traits which, admirable as they may be in a perpetual Carnation, would be defects in the border variety—the finibriated edge being almost certain to appear.

Sometimes the straggling habit will appear when plants are transferred into lighter soil than that in which they were originally grown, but the defect will not be noticeable in the resulting layers, which will accommodate themselves to this new medium; but there are varieties of lanky growth which are much more suited to pot culture than the open border, for, lovely as their flowers may be, it is next to impossible to layer them.

Where layers are not desired the habit of growth does not matter so much, but in a bed

where plants are left to increase naturally such varieties as Viceroy, Gordon Douglas—still the best crimson, and good anywhere—Mrs. Hawksbee, Glorious (very much like Ivan Lowe), and the new St. Clair Amos, to mention only a few, will serve to illustrate the more desirable type, the shoots of these sorts being strong and stocky, without coarseness. *J. B. Wells*

NOTES FROM A WELSH GARDEN.

No shrub has attracted so much attention during the last few weeks as *Mutisia decurrens* and none has been more worthy of it. A climbing Composite (if not the only one), this beautiful Chilean plant is rambling over the branches of a dwarf *Buddleia*, and its splendid flowers, five inches across, with about twenty broad rays in a glowing Gazania-orange, and a dark eye, are remarkably handsome. A curious feature of this plant is the forked tendril which terminates each leaf and which is a continuation of the mid-rib. These tendrils are as tough as whipcord and cling with extraordinary tenacity to anything they come in contact with. It is also interesting to note how the bases of the narrow, glaucous leaves are continued down the stems of the plant, thus giving the latter a pair of leafy wings.

Another notable Chilean plant now in bloom is *Mitraria coccinea*, a pretty little evergreen fond of a cool, vegetable soil, and a suitable subject for growing among dwarf *Rhododendrons*, *Pierises* and the like. The blossoms of this charming shrub are tubular, about one-and-a-half inch long, and of a shade of scarlet so soft and refined that the gorgeous wreaths of *Tropaeolum speciosum* which have invaded the former's territory appear almost blatant by comparison. *Mitraria coccinea* seems to be a variable shrub in regard to habit of growth, for whilst on a rock garden ledge it will often remain bushy and compact, and scarcely two feet high, the same plant will, if put among other evergreens, more robust than itself, twine through the branches of the latter to a height of four to five feet. In some gardens it is more successful when grown in that way.

Desfontainea spinosa came into flower unusually early this year and it is now (early August) at its best, aflame with its burnished trumpets of vermilion and yellow. *Dendromecon rigidum* and *Romneya Coulteri* are successfully upholding the prestige of California among their Chilean rivals, and the same country has other worthy representatives of its wonderful flora in *Pentstemon cordifolius*, *Diplacus glutinosus* (in three or four shades of colour from golden buff to a deep coppery orange) the fragrant *Rhododendron occidentale* in the cool shade of stream-side Alders, and *Zauchneria californica* in the stoniest and driest ledge we can afford it.

Plagianthus Lyallii, a mere stripling, has been very lovely leaning over the water, its large clusters of beautiful, paper-white flowers almost concealing the foliage. *P. pulchellus* on the contrary, has proved so unworthy of its specific name that its place has been taken by something more deserving. *Spiraea* (*Sorbaria*) *arborea* is a singularly charming waterside or damp soil shrub which is at its best just now. A free and robust grower, this is the handsomest of the Ash-leaved *Spiraeas*, the bronzy-tinted, pinnate leaves of great size being an excellent and fitting background for the immense terminal panicles of creamy white inflorescences. Few shrubs, or small trees, have the elegance or refinement of this splendid Meadowsweet and few more richly deserve a prominent, isolated position.

The most beautiful plant now blooming in the woodland is *Deinranthe coerulea*, over whose bristly, Begonia-like leaves are suspended from their wine-red stems bearing cup-shaped flowers in a wan lavender with a ring of silver-grey anthers within. No other plant in the whole course of the season attracts so much admiration as does this treasure which Mr. E. H. Wilson introduced from Hupeh a few years ago, and it has proved

hardy and easy in a cool, tree-shaded bed of leaf-mould mainly occupied by *Gaultherias*.

Campanula thyrsoides in a mixed border is an interesting member of its race, the hairy, eighteen-inch club-like flowering stem, suggestive of some *Verbascum*, being closely packed from base to top on all sides with pale, straw-yellow flowers as large as thimbles. These are very fragrant—an unusual attribute in *Campanulas*—and, to judge by the condition of the many bumble bees which spend the night in those ivory cups, the perfume, or the nectar, is evidently intoxicating.

Viola hederacea has made a large clump in a cool corner, its deep green, kidney-shaped

to hold the field, and the soft china-blue heads of *Allium Purdomii* will not be overlooked where that pretty little Bramble, *Rubus arcticus*, is flowering a second time.

Primula helodoxa has excelled itself near the water. The tips of its three-foot stems, several of which have borne over a dozen whorls of blossom, are still carrying a few of the lovely yellow flowers which have been such a remarkable feature of the bog all the summer. The rosy-crimson heads of *Sedum pulchellum* are making a pleasing mass of colour at the brink of a rivulet, close by them being a bold cluster of that excellent hybrid *Calceolaria John Innes*. *Parnassia palustris*, the Grass of



FIG. 47.—PLEIOCARPA MUTICA.

(see p. 128).

leaves making an admirable setting for the quaint, white-tipped purple flowers. That fine *Geranium*, *G. Wallichianum*, var. *E. C. Buxton*, is also in full bloom in a more or less shady spot, and another good old plant (now, I think rare) which appreciates some shelter from the hottest sun is *Dianthus Wolley Dod*, its eighteen-inch stems bearing beautiful rosy-crimson blossoms all through the summer. *Geranium Webbianum*, of gardens, which has not been a success hitherto has, this July, covered its neat little cushion of grey-green leaves with large white flowers daintily pencilled with purple. *Gentiana Przewalskii*, *G. linearis*, *G. septemfida*, *G. Pneumonanthe* and *G. Freyniana* are "carrying-on" until the ornate *Gentians* com-

Parnassus, is also flowering here, these plants being of a very dwarf form found growing on some sandy links of Lancashire. Here, too, is *Caltha biflora*, a pretty white-flowered Marsh Marigold not often seen in gardens, and, with its fleshy stems sprawling in the water of the above streamlet, is *Calla palustris* whose spathes are of a whiteness and quality deserving of more commendation than this humble *Arum* usually gets. Before these "flowers" fade the large cone-like spadix changes from green to a brilliant red.

Mimulus cardinalis is an all-summer bloomer at the margin of the bog, exceeding even the prolificacy of most of the hybrids. This scarlet-flowered species has proved very reliable here

even in soil that is extremely wet in winter. Another reputedly tender plant which has endured unprotected the worst that winter could do for some ten years is *Lobelia Cavanillesii*, a native, I believe, of Chili. This elegant species attains the height of about two feet and soon makes a patch of considerable size, the scarlet, yellow throated flowers being produced in succession from July onwards into autumn. This *Lobelia* is not, however, in the bog, but in a cool border soil which is well drained at all times. In a warmer medium we have now coming into bloom another interesting species, *L. Tupa*, which was introduced from Chili two centuries ago when it was known as *Tupa Feuilei*. This is a handsome, upstanding perennial with large leaves like a Foxglove in sage-green and ruddy stems which terminate in erect spikes of brick-red flowers. In some places this fine old herb is said to attain the height of six to eight feet, but here it does not exceed half that stature. Being entirely herbaceous *L. Tupa* may easily be protected in winter where there is any risk of loss. A. T. Johnson, *Ro Wen, Talycain, N. Wales*.

CULTURAL MEMORANDA.

BULBS FOR CHRISTMAS FLOWERING.

IRIS TINGITANA.—This beautiful Iris is a comparatively recent introduction, and, provided the bulbs are potted early, it may be had in flower for Christmas without much forcing. Four or five bulbs may be placed in a five-inch or six-inch pot, pressing them into the soil fairly firmly, and just covering them with soil. Many growers fail with this plant through using an excessively rich compost. It should be grown in old potting soil which has been used once, with the addition of a little leaf-mould and sand.

Stand the pots containing the bulbs in a cold frame, and water them; they will require no more moisture until the shoots appear above the soil. A plant or two may be turned out of their pots to examine the condition of the roots, and if the latter have formed freely, they may be watered carefully, and the plants placed on a shelf in the greenhouse.

When the pots are filled with roots a little weak liquid manure will benefit the plants, and, so soon as the flower spike shows, they may be grown in a little heat, but not too much, or the flowers will be poor in texture and colour.

The colour of the flowers is a beautiful pale blue, with a yellow blotch on the falls.

Procure the best quality bulbs from a reliable source.

POLYANTHUS NARCISSUS SNOWFLAKE.—This is a much improved form of the old Paper White Narcissus, and it comes into bloom earlier. The individual flowers are larger, of firmer texture, and quite as sweetly scented.

Good loamy soil, enriched with a little leaf-mould or manure from an old hot-bed and lightened with sand, is suitable as a rooting medium. Clean six-inch pots should be used; they should be crocked carefully and about half filled with the compost. Place about five or six bulbs, according to their size, on the soil without pressing them into it, then fill the pot with the compost and make it firm, just covering the apex of the bulbs.

Place the pots in a frame, well water the soil, and, after the pots have drained, cover them with about two inches of cocoa-nut fibre refuse. After an interval of two or three weeks, examine the pots to see if growth is developing, and if so, remove the covering and shade the plants for a day or so until the foliage turns green. The lights should be kept over them in case of heavy rains, allowing them plenty of air. When they have made good growth, they should be removed to a light, airy house, and, after a short time, when the pots are well filled with roots, they should be removed to a warmer house. Frequent applications of diluted liquid manure, about the colour

of weak tea, or a quick acting fertilizer sprinkled on the surface of the soil and watered into it will help to produce fine spikes of bloom. So soon as the flowers open, remove the plants to a cooler house. The plants will gain in appearance if each spike is tied loosely to a neat stake, and the growth kept upright.

CYNTHELLA HYACINTHS.—These miniature Hyacinths are very pretty and effective if well grown. They may be had in various colours, and develop several spikes of bloom from the one bulb. They are very light and graceful in appearance and excellent for planting in bowls or pans.

They should be potted directly they are received from the bulb merchant in a compost consisting of two parts loam, one part flaky leaf-mould and one part old manure, with plenty of silver sand added. The bulbs may be planted fairly closely together, placing sand at the base of each bulb, and just covering them with the soil. Treat them the same as advised for the *Polyanthus Narcissus* as regards frame culture, and then remove them to a shelf in a greenhouse to keep the growth sturdy. They will submit to gentle forcing so soon as the flower spikes show, but should be kept as near the roof-glass as possible, or they will become drawn and grow weakly. They should be removed to a cooler house when in bloom to preserve the colour of the flowers.

TULIPS.—The *Duc van Tholl* varieties of Tulips are the earliest to flower, and although they are somewhat smaller in the bloom than many of the taller varieties, they are valuable in that they may be forced into bloom very early. They may be had in red, white, and yellow colours; the red form is perhaps, the best.

The bulbs should be potted as early as possible in a compost similar to that advised for Hyacinths, with rather less sand. Make them fairly firm in the soil, water the latter, and cover the soil with fibre in a cold frame until the growth begins to push through, then remove them to a greenhouse.

These early Tulips are apt to develop very short stems, therefore they should be grown either in a shady part of the house, or covered with tiffany to draw up the flower stems. Some growers place them in a dark shed or similar place for a few days to effect this, but so soon as the shoots develop they should be placed in a house with plenty of light to strengthen them. If required for table or room decoration, they may be planted thickly in boxes and transferred to other receptacles when in bloom. R. W. Thatcher, *Carlton Park Gardens, Market Harboro'*.

NOTES FROM GLASNEVIN.

ONCIDIUM LEOPOLDIANUM.

THIS interesting Peruvian Orchid has recently flowered. A description of the species was given by the late R. A. Rolfe in *The Gardeners' Chronicle*, 1890, part 2, p. 556, and a more detailed history of its introduction in the *Orchid Review*, November, 1914, p. 345, where also is a figure of the flowers. A somewhat highly-coloured figure is given in *Lindenia*, vol. 6, t. 274. The Glasnevin plant was purchased through Messrs. Protheroe and Morris from the Fairlawn Collection in 1921. The flower scape is over six feet long, flexuose, bearing flowers in sprays of three to four for about half its length; the sepals and petals are white suffused with rosy-purple, and the flat ovate lip, darker in colour, is margined with white and bears a yellow crest. The plant is grown in the cool end of a corridor, on the north side of the propagating range, with a minimum temperature of about 50° F. It is attached to a wooden spar fixed in an ordinary flower pot.

ODONTOGLOSSUM CORONARIUM.

This somewhat uncommon species is not free flowering as a rule and is rather ungainly in habit. It has just flowered here and is

certainly one of the most attractive members of the genus. The long, creeping rhizome bears ovoid pseudo-bulbs, producing one leaf at the apex and one from the base, the flower spike arising in the axil of the latter and sheathed by the petiole. The spike is over one foot long, bracteate and bears from eighteen to twenty flowers. The flowers are over one inch wide, the sepals and petals reddish-brown, mottled yellow at the base; the lip is yellow blotched with reddish-brown at the base. This species requires basket culture and, when making growth, does well in the cool house, but when growth is finished, the plant should be hung near the roof in a bright, airy greenhouse.

ANEMONE GLAUCIFOLIA.

First described by Franchet in 1886, this beautiful Windflower from Yunnan has recently been introduced. A specimen received from the Edinburgh Botanic Gardens is now in flower. It has been grown in an airy greenhouse, in an ordinary potting mixture of loam, leaf-soil, and sand. The leaves are basal, six to twelve inches long, bipinnatifid and furnished with whitish hairs on both surfaces. The peduncle, arising from the centre of the leaf rosette, reaches a height of two feet. The flowers arise from the apex of the peduncle and are borne on pedicels five to seven inches long, the central flower opening first. Three prominent foliaceous bracts form an involucre at the base of the umbel. The sepals are oblong, obtuse, two inches long by one-and-a-half inch wide, pale violet-blue in colour. As yet little can be said of its cultural requirements but, should it prove possible to raise plants from home saved seeds, further information will be forthcoming.

CODONOPSIS FORRESTII.

The genus *Codonopsis* is remarkably variable in habit, from the dwarf, rather compact *C. ovata* with pale blue flowers to the far spreading twiners, such as *C. tubulosa* and the species under notice. Others like *C. clematidea* raise their flower scapes more or less erect to a height of two feet or so, and bear nodding, bell-shaped flowers remarkable for their wonderful internal coloration. *C. Forrestii* (Fig. 46), which came to Glasnevin from Mr. A. K. Bulley, belongs to the twining section. It has slender glabrous stems bearing cordate-ovate leaves the larger two-and-a-quarter inches wide by two-and-a-half inches long, dull green above, glaucous below, glabrous except the margins which are finely ciliate; as a rule the leaves are alternate but occasionally a pair are nearly opposite. The flowers are two-and-a-quarter inches in diameter, petals pale blue with darker veining and each with a dark purple band at the base; sepals acute bright green, one-third the length of the petals. The stamens are peculiar in arising each from a triangular base which is heavily fringed with white hairs.

At present this species is cultivated in a pan in a cold house and allowed to twine over a few short twigs. It is evident, however, that it requires more scope, and should it prove hardy in the open, a good effect might result from allowing it to envelop a decrepit shrub or scramble over ordinary Pea-sticks.

PLEIOCARPA MUTICA.

Still rare in cultivation, this beautiful plant (Fig. 47) was apparently first grown in the Botanic Gardens, Glasgow, whence probably, all the plants now in gardens have emanated. It belongs to the family Apocynaceae the genus being endemic in Tropical Africa. The opposite, rather leathery leaves are from three to six inches long, dark green, shining on the upper surface and with undulate margins. The flowers are produced freely in dense clusters on all but the shoots of the current year; the corolla is pure white, half-an-inch or more long with spreading lobes about half as much in length; the calyx is minute. When fully open the flowers emit a strong but sweet scent which permeates the whole house. A flowering shoot with leaves is figured in the *Botanical Magazine*, t. 8343. J. W. Besant.

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM LITTLE GEM.

A FLOWER of this remarkably interesting cross between *C. Harrisonianum* *superbum* (*villosum* *barbatum*) and *C. Baron Schröder* (*Fairrianum* $\times$ *oenanthum* *superbum*) is sent by a correspondent, and is specially noteworthy as it is the counterpart of the original plant which was flowered by the raisers, Messrs. Jas. Veitch and Sons, and fully described in *The Gardeners' Chronicle* R.H.S. report, April 25, 1903, p. 270. It was there suggested that when fully established it would revert to the stature of its parents. But the flower as now seen is still the same well-formed small type, the broadly ovate sepals greenish-white, flushed with rose and bearing closely-arranged chocolate-purple spotted lines, the shining petals being greenish at the base, spotted like the dorsal sepal, the outer halves and lip dark purplish brown. It is of the *C. Thalia* class but the introduction of *C. Harrisonianum* instead of *C. insignis* resulted in more rounded and smaller flowers instead of larger as might be expected.

ODONTOGLOSSUM MAHARENEE.

Too late to allow of the correction being made in the New Hybrid Orchid list in the issue for July 25, p. 68, Messrs. Sanders write that the above name should be substituted for *Odontoglossum Maharajah*, previously sent and published in the list, as that name had been previously used. In the same list *Odm. Lambert* should be *O. Lambert*.

CHONDRORHYNCHA CHESTERTONII.

MANY lovers of Orchids appreciate flowers of a bright and showy nature, whilst others are interested in those of peculiar and fantastic form. The above-named species produces an interesting and quaint flower; but when seen in good condition it is also beautiful and fascinating.

Although Orchids with fringed lips are by no means rare—familiar examples being the remarkable *Dendrobium Brymerianum*, *D. Harveyanum*, *Brassavola Digbyana*, with its numerous hybrids, *Nanodes Medusae*, and *Habenaria Susannae*—those with fringed petals as well as fringed lips are not a numerous class. *Dendrobium Harveyanum* has a decided fringe both upon its petals and lip.

Although described by Reichenbach, in *The Gardeners' Chronicle*, as far back as 1879, ii., p. 648, *Chondrorhyncha Chestertonii*, is not at the present day over-abundant in collections. The flowers are light yellow, with some brown blotches on the base of the lip, and they measure nearly three inches across. The plants' chief attraction is its well-developed fringe on the petals, which is much longer and of a more filigree nature on the lip, making it a most remarkable subject. The plant produces its flowers from time to time, several in one season, from its tufted growths. I have found it is best grown with *Miltonias* of the *vexillaria* family, in a compost similar to that used for that species. When grown under these conditions and treated in the same manner the best results have been attained.

It often makes a hard, woody root stock, as do many other Orchids; and when this occurs the hard part should be cut away when repotting the plants. Although generally classed with the *Zygopetalums* of the *Bollee* and *Pescatorea* family, the *Chondrorhyncha* species succeeds under much cooler treatment, although there is one natural hybrid recorded between it and *Bolleea coelestis*, under the name of *Chondrobolleea Froebeliana*, which flowered with M. Otto Froebel at Zurich in 1902. J. T. B.

INDOOR PLANTS.

TILLANDSIA XIPHIOIDES.

TILLANDSIA is a large genus of Bromeliaceous plants inhabiting tropical America and the West Indies, where they occur mostly as epiphytes, usually growing in the forks of the forest trees and often clothing the branches in association with Orchids and other epiphytal

and charcoal, but the smaller kinds succeed best if fastened to a block of wood and suspended from the roof, it is important the plants should be kept moist by frequent sprayings, especially during hot weather.

T. xiphioides (Fig. 48), commonly known as the Buenos Ayres Air-plant, is a distinct and pretty species, with large snow-white, deliciously scented flowers for which it is much prized. The leaves, which are crowded together in the form of a rosette,



FIG. 48.—*TILLANDSIA XIPHIOIDES*.

plants. They vary much in size and habit from the small *T. ionantha*, which is only two inches or three inches high, to the magnificent *T. regina*, in which the inflorescence attains a height of seven feet or more, the broad, sheathing leaves being from four feet to five feet long. In some species the flowers and bracts are very handsome and brilliant, others have beautifully marked and coloured leaves.

Under cultivation, *Tillandsias* require a warm, moist atmosphere at all seasons of the year. The stronger growers should be potted in a compost of fibrous peat, *Sphagnum*-moss,

are from four inches to six inches long and half-an-inch broad, very thick and rigid and covered with a silvery-grey tomentum. Introduced more than one hundred years ago, it is now a very uncommon plant in English gardens, for, like many other beautiful tropical plants, *Tillandsias* have gone out of fashion. This, no doubt, is due to the fact that out-door gardening is the craze at the present time. Although the loss to cultivation of so many beautiful plants is to be regretted, it is hoped they will again occupy the position they once held in decorating our plant houses. T. W. T.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.

Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be written on one side ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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HAMPTON COURT GARDENS.

ALTHOUGH the primary object of the majority of those who visit Hampton Court is undoubtedly to see the Palace and state apartments, the wealth of flowers in the beds and borders at the present time is worth going a long way to see.

By flower lovers, and in fact, the majority of visitors, the first comment made refers to the delicious fragrance of the Heliotropes, planted in very large numbers in beds and borders. These are mostly tall plants of the variety President Garfield, and the flowers fill the air with scent. Another plant, the perfume of which has brought it into prominence with the public, is *Humea elegans*. The peculiar odour of the foliage has caused the public to give it the popular name of "Incense Plant." In the mixed flower border many specimens are effectively intermingled with groups of brilliantly coloured flowers.

Conspicuous in the mixed flower border, under the wall, along the main walk, are groups of red and golden-yellow Celosias, representing a particular good strain, with large plumes. Two large groups of *Lilium longiflorum* are closely packed with their deliciously fragrant white trumpets. The tall, slender spikes of *Gilia coronopifolia* are very striking with their scarlet blossoms, and Larkspur-like foliage. Masses of *Hydrangea paniculata grandiflora* will be effective for some weeks to come, and *Bouvardia Humboldtii grandiflora* is also planted in quantity and flowering freely. *Verbena "Lovely"* is a very distinct bedding variety with slate-blue flowers.

During the last week in July large groups of herbaceous Phloxes, comprising many of the best sorts, were the prominent feature of the perennial border. Phloxes are exceptionally well cultivated at Hampton Court and this year is no exception, the plants being full of vigour and carrying large flower heads. Most prominent of all is the brilliant orange-red Coquelicot, not usually one of the most vigorous, but here the picture of health and beauty. Groups of *Erigeron Quakeress* are producing large quantities of mauve blossoms on plants eighteen inches high. Blooming freely over a long season this a very valuable perennial for summer and autumn flowering. Several varieties of the Ox-Eye Daisy, *Chrysanthemum maximum*, represent this popular hardy border flower, the old favourite, Mrs. C. Lothian Bell, being the best, although the individual blooms are surpassed in size by the King Edward variety.

While the recent heavy rains have tempor-

arily checked the brilliant display of the bedding Zonal Pelargoniums, the wet weather has fully demonstrated the value of the tuberous Begonias for bedding under somewhat moist conditions. The wealth of blossom provide gorgeous masses of colour in several large beds. Chief among these are two beds of the small, double-red Begonia Burgomaster Max with a groundwork of *Alyssum maritimum* and a few dot plants of *Centaurea candidissima*. Equally effective is the double pink Begonia Major Hope interspersed with the silvery-white-foliaged *Leucophyta Brownii*.

A delightful and effective arrangement of shades of yellow, silver and blue is obtained with golden-yellow Celosias, Delphinium Blue Butterfly, the yellow double tuberous Begonia Colonel Laussedat, and *Leucophyta Brownii* with a groundwork of the blue *Lobelia Waverley* and the variegated *Mesembryanthemum cordifolium*. The mixture of tall plants of *Streptosolen Jamesonii* and *Heliotrope* President Garfield, both plants flowering freely, is very effective in a large bed. The same variety of *Heliotrope* is used in another bed with *Astilbe Pink Pearl*, and a groundwork and edging of *Veronica Andersonii variegata* with the growths pegged down.

In the centre of the garden the large, circular pond is gay with a varied collection of Water Lilies, all flowering freely. Standing on coping all round the pond are large specimen plants, in tubs, of *Agapanthus umbellatus*. They are very effective with many spikes of blue flowers, which are set off to advantage by the background of dark green foliage of the old Yew trees, which in recent years appear to have taken on a new lease of life. *Visitor.*

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XV.—A HOLIDAY IN THE MOUNTAINS.

In August we felt we needed a holiday, and decided to take a month's sick leave. I was suffering from a chronic crick in the neck, brought on by gazing round at the flora as I was riding or walking along. Cawder had an attack of pluvial depression, and a change of air was obviously indicated. The sea-side being too far away, we determined to take our holiday in the mountains.

On August 9, in bright weather, we left the home fires burning and started northwards down the *rong*. After about six miles we reached the end of the open pastures of the broad, upper glacial valley, and entered a narrow, water-worn glen. Here we entered the forest. There were the usual Rhododendrons—the "Grande," with quite extraordinarily variable foliage; the rose "Fortunei," easily recognisable by its smooth, tawny bark; the "Taliense," with its silver-white, woolly leaves, and the "Triflorum." There were numerous ground Orchids, too, in meadow, bog, and forest, the latter mostly saprophytic or parasitic; and a many fruited Podophyllum, with leaves like those of *P. tabularis*. As we got down to lower altitudes the vegetation began to change markedly, resembling that of the gorge below Gyala.

I had two surprises on the second day. It will be recalled that early in May, during our march down the river, I had come across a fine, pink-flowered "Virgatum" Rhododendron growing in a bog, and had noted it as one worthy of particular attention. There were only one or two plants of it, however, and it was necessary to find it in bulk. After that I searched every bog for miles around, without result. By the end of June I had given it up, and discreetly refrained from mentioning the plant

again. It was one of the lost ones. And suddenly, on August 10, I found it again, not one or two plants merely, but growing in masses. And where do you think it was growing? Why, on sun soaked, Pine and Bracken clad slopes, like any other "Virgatum" Rhododendron! Its presence in a bog was just an accident, and I had been wasting my time searching the bogs for it!

The other surprise was the pink-spotted Martagon Lily, sheaves of which grew all up the hillside; the warm air was heavy with its fragrance. Growing three or four feet high, bearing twenty or more blooms, it was a fine sight.

After that we came down into forests where grew shrubs or trees such as we had not seen since we left Sikkim—a fine *Ilex*, a species of *Enkianthus*, in fruit, *Ailanthus*, *Daphne*, etc., and such herbs as *Leptocodon gracilis*, *Anemone japonica* (or *vitifolia*?), and *Campanula colorata*. We had now descended lower than we had been for months, to about 8,500 feet altitude.

On the 12th we turned westwards and began to climb again; also the spell of fine weather came to an end. We had a wretched march in the rain, and a still more wretched camp in a meadow. There was little that was new amongst the vegetation—a nodding, yellow Clematis was in bloom, and the "pulchelloides" Primula reappeared, still in flower. In the meadow, Monks-hood, Allium, and other large herbs held sway. For those who enjoy statistics, I may mention that we picked here a "Cowslip Sikkimensis" Primula, three feet nine inches high, bearing an umbel five-and-a-half inches high and five inches through, with forty-one flowers open, thirty passed over, and twenty buds. It is not necessary to bend over in order to smell these giant Cowslips!

A long march on the following day, still in pouring rain, brought us to a small monastery in the alpine valley. Quite a number of interesting plants were met with, including a fine rock Cyananthus, with beautiful silver-haired foliage, and an exquisite cream-flowered *Cremanthodium*. More surprising was it to find here the yellow-flowered "Lepidotum" Rhododendron (accompanied by the cherry-coloured species) and also what seemed to be the purple-flowered "Saluense"; though as this latter was not in bloom I could not be certain it was the same species. Higher up grew scattered tufts of the Strawberry "Saluense." In the forest one noted abundance of the yellow-flowered "Souliei," and occasional bushes of the handsome-leaved "Roxicanum." The "Geranioides" Primula, so scanty where we first discovered it, was abundant here, and *Isopyrum grandiflorum*, first seen on the Himalaya as an obviously rare plant was quite common on this side of the river. The glaucous-leaved Barberry, bluish-green against a mesh of black stems, looks its best when drenched, and a *Lonicera*, with almost equally glaucous foliage and orange-scarlet berries, was a handsome object in the high meadows.

The weather was so bad on August 14 that we kept to the shelter of the monastery, cold and draughty though it was. On the 15th we crossed the pass, which is of no great altitude, being under 15,000 feet, and far easier than most of the dozen we had crossed. Here a new surprise awaited us, for I found quite the finest "Sikkimensis" Primula I have yet come across, with very large, deep claret-coloured bells, glossy as velvet, and with that delightful, elusive fragrance which seems to belong to every "Sikkimensis" Primula in this strange and wonderful land. This plant grew by brook and meadow, but was very local—we saw it only during the one day's march. More astonishing was it to find on the cliff two dwarf Rhododendrons in bloom—"Scarlet Runner" as I think (I have not yet compared it with the Himalayan plant of that name), and a large edition of "Plum Warner," with the usual florescent "Campy-

* The previous articles by Mr. Kingdon Ward were published in our issue of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, and August 1, 1925.

logynum" corolla, an inch long and an inch across, borne on a two-inch pedicel. It must be remembered that these plants were flowering nearly two months later than their Himalayan prototypes. On the other side of the pass I found a yellow "Souliei" *Rhododendron* still in bloom—a variety having



FIG. 49.—LAKE DISTRICT: SOUTH CENTRAL TIBET.

a crimson aureole at the base of the corolla, around the ovary. I may remark here that in June I found a third colour variety of this plant, having the lemon-coloured corolla faintly speckled with crimson.

Descending through the usual *Picea-Juniper* forest, with scattered Larch and bush *Rhododendron*, we emerged into a fine alpine valley with a lake at its head, into which flowed a large glacier (Fig. 49). We turned down this valley, which was very boggy and full of mosquitos, and camped outside a wretched village in pouring rain rather than face the dirt and fauna of a roof over our heads. On August 17 we pursued our way down the valley, through meadows of flowers—but rather ordinary flowers after what we had been accustomed to. They formed an herbaceous border along the path—*Cyananthus*, *Scabiosa*, *Potentilla*, *Cynoglossum*, *Impatiens*, *Polygonum*, *Stellera*, *Geranium*, *Aster*, *Codonopsis*, *Adenophora*, *Pedicularis*, *Delphinium*, *Salvia*, and a dozen others often several species of each genus; their colours, too, were alluring especially the high-tension blues of Larkspur and *Cynoglossum*, the aniline yellows and crimsons of *Pedicularis*, and the crushed-strawberry of *Impatiens*. But after all these were only vulgar weeds—we were after bigger game.

On the following day we reached the mysterious Pasum lake, which is about eight miles long and one to two miles wide, beautifully situated with snow peaks all round it. The lake is nearly 12,000 feet above sea level, and wooded to the water's edge with Fir and Silver Birch and Poplar. We marched round the head of the lake, but I found few plants of interest here, except a very hairy-leaved, pale-flowered form of *Campanula colorata*, a violet-flowered, leathery-leaved *Didissandra* (this I have seen in Yunnan), and on some gravel screes, a fine, purple-flowered *Lactuca*—not the one which is so common in western China, but a much larger-flowered species.

On the sheltered side, the "Geranioides" *Primula* was abundant under the trees, on the exposed side was the "pulchelloides" *Primula*. A few small ground Orchids and *Saxifrages* completed the roll.

We continued the descent on August 19, in very wet weather, and at the foot of the lake came to a broad, stony valley, dotted with villages. The tide of Chinese invasion had swept up here many years ago, leaving a trail of devastation behind it. There were also numerous high stone watch towers, like factory chimneys, dating from a much earlier period. There was no forest, except up in the gullies and on the flanks of the snowy peaks which rose on either side. Two plants scattered over the hard gravelly surface may be mentioned—an *Onosma* with dark violet flowers arranged in a close helicoid cyme, a big, coarse, hairy thing; and a dainty little *Forget-me-Not*, with very small flowers but very many of them, forming little puffs of blue littered over the brown earth. This struck me as one of those plants which nature has planted in the wrong place—it would have looked far better in the rock garden massed in nooks. Almost I was persuaded to collect seeds of it for that purpose, though it can hardly be called a first-class plant.

After reaching the junction of two considerable streams, we turned up the larger, and presently discovered an important monastery, where we were royally entertained by the local officials. We now learnt that by continuing more or less north-west up this valley we should eventually reach the high road to Lhasa; so we continued our exploration. This valley was very boggy below and very thinly wooded above, but it yielded one interesting plant—a "Sikkimensis" *Primula* with very fragrant flowers, milk-white or sulphur, powdered inside with meal. I am not quite sure whether this differs from the many coloured species already recorded, but I think it does. At any rate the flowers in this case were always either yellow or white, never violet, claret, or any other shades; nor was the inside of the corolla so thickly or so regularly plastered with meal. This plant, moreover, almost always had two whorls of flowers, often three, occasionally four, resembling in this

pleasant ride up the valley through the last of the forest—*Rhododendron* and gnarled *Juniper*—to the alpine meadows, where we camped with the yak herds. The lawns now were strewn with great blue, trumpet *Gentians*, one very deep blue, like *G. sino-ornata*, the other much lighter, like *G. Farreri*. A fine Larkspur also grew here—it had sometimes deep violet blooms, but more



Photo Lord Cawder.

FIG. 50.—YELLOW POPPIES AT 14,000 FEET ELEVATION.

often they were milk-white, faintly flushed with violet. There was a good deal of wild *Rhubarb* in this valley, which the Tibetans ate. I also ate some—raw—and the effect was that of a whole carton of *Rhubarb* pills, so that I have not tried any since.

We were now back at an altitude of over 14,000 feet, with a 17,000 feet pass over the great Salween divide in front of us. On the following day we crossed the pass, a bleak, stony place, above the limit of

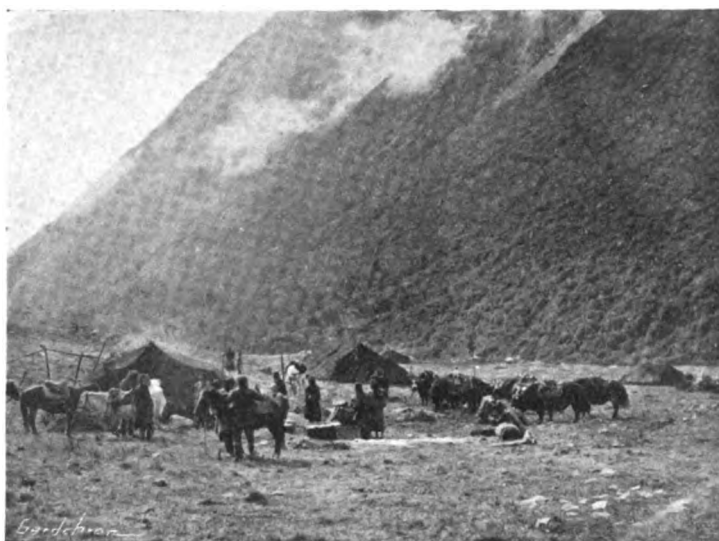


FIG. 51.—EVENING IN CAMP.

respect a "Candelabra" *Primula* rather than a "Sikkimensis." Like most of its kind, it grew in colonies in shady bogs, sometimes associated with the Cowslip "Sikkimensis." Another interesting plant I saw in this valley was a *Gesnerad*—probably an *Oreocharis*, but it was out of reach on a high cliff.

August 24 was a fine day, and we had a

flowering plants. All around us were snow peaks and dying glaciers. From the pass we descended straight to the "bad lands," the "barrens"—In other words, we found ourselves on the Tibetan plateau once more, with not a tree for hundreds of miles. Of the new alpine flora which we found here I shall have something to write in my next letter. F. Kingdon Ward,

TREES AND SHRUBS.

COTONEASTER FRIGIDA.

As Sir Herbert Maxwell indicates in his interesting letter on p. 95, his thirty-eight feet high *Cotoneaster frigida* is not a record specimen for the British Isles. Some twenty years ago I measured an example at Pen-carrow, North Cornwall, with Mackenzie's dendrometer and found it to be almost forty feet six inches in height. Its girth measurement would have been valueless because it branched less than two feet from the ground. This was a many-branched, erect example and, during mild winters was a sub-evergreen, but when, as happened fairly often, there were 15° of frost, it was deciduous.

As a matter of interest I have consulted several different books and cannot find any giving the height of this *Cotoneaster* as being more than twenty feet, and it is usually described as a low spreading shrub, though Robinson in his *English Flower Garden* describes it as "a low tree reaching twenty feet or more." Quite recently I saw a handsome, tree-like specimen in the beautiful Royal Victoria Park, Bath, where Mr. Halliburton tends the many rare and interesting trees with skilful care. The habit of this specimen was much like that of *Pyrus Aucuparia*.

So far as my observations have gone it is in the western districts, where the rainfall is generally heaviest, that one finds the tree-like specimens and these have large and luxuriant leaves, while in drier districts *Cotoneaster frigida* is rarely more than a large shrub of spreading habit. A. C. Bartlett.

THE COCKSPUR THORN.

CRATAEGUS CRUS-GALLI is a native of Eastern North America, its first introduction to British gardens being recorded so long ago as 1691. The popular name refers to the prominent thorns, three inches or more in length and often branched. As a lawn tree it is one of the most useful members of a very large family, valuable in both small and large gardens. The corymbs of white flowers in June give place in most seasons to an abundant crop of deep red fruits in autumn when the leaves change to scarlet and rich deep red. Long after the leaves fall the fruits remain a bright and cheerful-looking winter feature.

Several varieties of the Cockspur Thorn are in cultivation, the name being a general guide to its variation in foliage; var. *arbutifolia*, having a larger leaf; var. *linearis*, var. *pyracanthifolia*, narrow obovate leaves; and var. *salicifolia*, thin, narrow, oblanceolate leaves.

A selection of the North American Thorns is very desirable for ornamental planting on lawns, pleasure grounds and parks. They are good town trees, and few flowering subjects equal them for planting in exposed situations. Thorns thrive in most soils. It is desirable to move young plants in the nursery several times while they are in a small state, otherwise they send out long roots the moving of which is likely to give the trees a check when they are planted in their permanent positions. A. O.

GENISTA VIRGATA.

ALTHOUGH the Madeira Broom was introduced over two centuries ago it is still uncommon in gardens. This is the more surprising when one realises that it is practically hardly anywhere and a shrub of singular beauty and usefulness. It will flourish in any light soil, either in the open or in thin woodland, and there make a stately bush up to a dozen feet in height and often as much in width. It is, moreover, longer-lived than most others of its kind, keeping its shapely habit for many years without getting leggy.

G. virgata is a deciduous species, the innumerable very slender twigs being well-furnished with small, grey-green silky leaves. At the end of the current season's growth appear, about midsummer, the racemes of bright yellow flowers, and these are yielded in such abundance that the whole shrub becomes a mass of colour which is maintained for several weeks.

Plants of *Genista virgata* may be raised from seeds which are yielded in plenty, and the seedlings, which invariably come true to type, grow rapidly and commence flowering when about two feet high. A. T. J.

PLAGIANTHUS (GAYA) LYALLII.

The interesting notes by Mr. Correvo and Mr. Osborn relating to this handsome New Zealand shrub, which appeared in *The Gardeners' Chronicle* of July 25th, page 72, are very suggestive. I believe it is a fact that *Plagianthus Lyallii* is sometimes confused with an allied Malvaceous shrub, *Hoheria populnea*, which is also a native of New Zealand. Both plants are known locally as Lace Barks, from the fact that the inner bark can be easily separated into thin layers of net-like tissue resembling lace. The Maori name for *Plagianthus* is "whau-whi," and this name is also sometimes used for the *Hoheria* in the South, although it is more generally known as "Houhere."

In this country the *Hoheria* is not often grown as an ornamental shrub, but Kirk in his large folio work *The Forest Flora of New Zealand*, refers to it in the following terms:—"It is everywhere admired for its handsome foliage, and the beauty of its pure white flowers, which are produced in vast profusion during the early winter months." It is found throughout the country, except in Stewart Island, from sea-level to 1,500 feet. It is extremely variable at different stages of growth, especially as regards the size, shape, and marginal indentation of the leaves. Two forms, known as *lanceolata* and *angustifolia* are figured by Kirk in the work above-mentioned, in addition to the type plant; transitional forms, which are said to occur frequently, make it almost impossible to draw hard lines of separation.

In his *Manual of the New Zealand Flora*, Cheeseman states "It is doubtful whether it should be regarded as composed of one highly variable species or of three or four closely allied ones."

Regarding *Plagianthus Lyallii*, Kirk states, "It is one of the most graceful and beautiful flowering trees in the New Zealand flora; its large white flowers, nearly an inch in diameter, are produced in vast profusion, and harmonize beautifully with the foliage which is at once soft in character and bold in outline: it has an additional attraction for it is one of the few New Zealand trees which is truly deciduous, and exhibits vivid autumnal tints, mostly of soft yellow shades, which afford a fine contrast with the deep green of the mountain Beech and other trees with which it is usually surrounded. This deciduous character is restricted to high levels, and is only seen at altitudes of 3,000 feet and upwards; at lower levels the plant is ever-green."

In its distribution in New Zealand *P. Lyallii* is restricted to South Island and does not occur in Stewart Island. It is more plentiful on the western than on the eastern side and descends to sea-level, but it is said to be most abundant above 2,000 feet, ascending to 4,000 feet. It inhabits the borders of streams in alpine and sub-alpine forests.

The following are Kirk's detailed descriptions of these two shrubs which it may interest your readers to compare:—

**Plagianthus Lyallii* forms a sub-alpine or alpine shrub or small tree, sometimes forty feet high, with rather distant branches; the branchlets, young leaves, flower-stalks, and calyces are clothed with very short soft, starry

hairs, which, however, gradually disappear from the upper surface of the leaves. The leaves of young plants are deeply lobed, and their margins are cut into smaller lobes or coarse teeth; on old plants the leaves are alternate and carried on slender leaf-stalks, one inch to two inches long; the blades are from two inches to five inches long, and from one-and-a-half inch to two inches broad, narrowed into a long point at the apex, and with the margins cut into large obtuse teeth, many of which are again divided.

The flowers are carried on slender peduncles springing from the axils of the leaves, and may be solitary or in clusters of from three to six; the calyx is broadly cup-shaped, with five spreading triangular teeth; the petals are five, inserted on the floral receptacle, narrowed at the base, and slightly notched on one side. The stamens are numerous; the filaments are united below, forming a short tube which surrounds the base of the style; and the ovary is globose, about ten- to fourteen-celled, with the same number of styles united below, the upper portion free; the stigmas are flattened and stigmatiferous on the upper surface only. The fruit is globose but flattened on the upper surface, and composed of from ten to twelve or more flattened carpels each containing a flattened seed."

This plant was originally described by Hooker fil. as *Hoheria Lyallii*, and figured in *Flora Novae-Zelandiae*, i. ii. Kirk quotes this description in his *Forest Flora*, and appends a note as follows:—"In the *Flora Novae-Zelandiae* this species is figured with very long filiform styles and linear stigmas; but in all the specimens which I have been able to examine the free portion of the style is very short, with a decidedly flattened and expanded stigma, stigmatiferous on the upper surface and outer margin, sometimes almost capitate. It might fairly be placed in *Hoheria*."

Cheeseman in his *Manual of the New Zealand Flora*, follows Baker, and refers *Plagianthus Lyallii* to *Gaya*, a genus of plants chiefly South American. In a note, Cheeseman states:—"There are apparently two forms of flowers, one with long styles, almost equalling the stamens, another with styles less than half their length."

The *Hoheria* is described by Kirk as follows:—"**Hoheria populnea* is an extremely variable plant, especially with regard to the shape and size of the leaves; the difficulties of identification arising from this cause are increased by the remarkable variations exhibited by two of the principal forms at different periods of growth, the foliage of which might almost be described as polymorphic. All the varieties form small trees twenty feet to forty-five feet high or more, but the trunk rarely attains a diameter of two feet, and in the majority of cases is less than one foot; frequently the plant is merely a shrub, and flowering specimens may occasionally be seen less than five feet in height. The bark is dark brown or black, and is capable of division into a number of layers, which may be used for the same purpose as the bark of the Lime-tree in Europe."

The leaves vary in length from a quarter-inch to five inches, and from one-eighth inch to two inches in breadth. In shape, they vary from broadly ovate or lanceolate to linear-oblong; the margins may be cut into small regular teeth, or the teeth may be irregular and very large, obtuse or acute, or even spinulose; the base may be broadly rounded or gradually narrowed, or sharply wedge-shape, with the apex acute, or tapering into a long point, or obtuse.

The flowers are usually produced in fascicles in the axils of the leaves, each fascicle consisting of from three to ten flowers; occasionally the flowers are solitary, especially in the small-leaved forms; the flower-stalks and calyx may be clothed with a dense coat of short hairs, or may be nearly smooth, and the former are invariably pointed, usually below the middle. The calyx forms a

* Kirk's *Forest Flora of New Zealand*, 1889, Plate XXXIV.

* Kirk's *Forest Flora of New Zealand*, 1889, Plate III., figs. Iva, Iiv, Iv, and Iv.

wide cup with five broad triangular teeth, silky or with scattered tufts of short hairs; the petals are five in number, oblique in the upper margin, and usually with a curious notch above the middle, and white hairs on the outer surface. The stamens are of singular structure, the filaments being united below to form a column or tube, which encircles the pistil for half its length or more, when it divides into five sets or bundles, each containing from five to eight stamens, the column and the lower portion of the free filaments being more or less hairy; the anthers are kidney-shaped. The ovary is five- or rarely six-celled, conical in outline, with five or six longitudinal furrows, the free upper portion clothed with silky hairs; styles five, slender, usually exceeding the free portion of the stamens in length, with capitate stigmas. Fruit dry, consisting of five or six carpels arranged around a central axis: each carpel crested with an oblique wing, and containing a single seed." *H. Spooner.*

MARKET FRUIT GARDEN.

DROUGHT for the first three weeks of July and a deluge at the close made it a very trying month for fruit-growers. The long drought was not effectually broken in my district until July 22, when a thunderstorm gave 1.71 inch of rain. The light showers which fell during the preceding period were not enough to prevent bush fruits from suffering; and tree fruits also began to show signs of distress. They revived rapidly after the thunderstorm, which brought all the rain that was wanted. Unfortunately we were doomed to have much more than we needed. Rain fell on each of the last seven days of the month (2.34 in.), causing serious interruption of the work of picking early Plums and Apples for the bank holiday markets. Worse still, a gale on the 27th caused a heavy fall of Apples and even Plums. The total rainfall of July at my place was 4.77 ins., which is much above the average.

A NEW PACKING SHED.

When filling in my crop report for *The Gardeners' Chronicle* I put my yield of Apples as "average" and the quality as "bad." I am not at all sure that it should not have been "over" and "good." Now that the fruits have swelled out the trees look very full, even where thinned; and scab has not disfigured the fruit to the extent which seemed almost certain. The continuance of the drought probably checked the disease. At any rate I have decided that the crop is promising enough to justify the building of a new packing shed. The site for this was levelled two years ago, but there has not since been a crop heavy enough to warrant the expense of building. Now I shall have a fine place for packing. The work has always been done in a large barn, nearly half of which was long ago divided off to make a fruit store. The remaining space had to serve for packing and for stacking the boxes of Apples as they were brought in from the plantations. The new building is a lean-to on the back of this barn. It will be used exclusively for packing, leaving the whole space of the old barn for stacking the fruit. Very few fruit farms seem to me to have enough room for packing, or enough light. There cannot be too much light for rapid grading and packing. The new building will have windows all along the front and two skylights running right down the roof. I expect to find that top light will be very valuable. To make the arrangements perfect a Cutler grader ought to be installed, but this will have to wait. This is an American machine which sizes the Apples by weight, and is the only perfect grader at present available. The

only objections to it are its price and the fact that it must be driven by engine power. I shall have to manage with my old grader, which sizes the Apples (more or less) by passing them over perforated belts. I am going to try the effect of a preliminary sorting on a canvas-topped table arranged in place of the original hopper of the machine. This will get rid of any fruit that is blemished and any that is too small to be marketable, making the work of the actual packers more fool-proof. This is desirable, because the ideas of individual packers always vary, rendering it difficult to secure a uniform grade.

TRAPPING APPLE BLOSSOM WEEVIL.

During June sacking bands were tied around the stems of all the trees in one plantation to trap Apple blossom weevils. This plan, introduced by the East Malling Research Station, seems likely to do good, as weevils began to come into the bands during July. They may be expected to continue to arrive until the end of November. The bands will be taken off in December and soaked in barrels of water, with a film of paraffin on the top to prevent the escape of the weevils, after which the bands can be dried and used again. The bands, which should really be attached in May, are made by cutting up any old fertilizer bags. I find that the easiest way to do this is to draw the bags against an old scythe blade or other sharp edge fixed in a vice. The bands should be about six inches wide and long enough to go twice around the stem, so as to form a double thickness of sacking. Most of the weevils get between the two folds. Cutting the bags lengthways into strips answers the purpose very well. The bands should be secured with string tied once round the centre, so that the weevils can enter either from above or below. They should be fixed as high up as the length of stem allows.

MORELLO CHERRIES.

The most rapid of the tree fruits to come into profitable bearing, I imagine, is the Morello Cherry. A relative of mine planted some two-year-old trees of bush form in the winter of 1923, and they have borne quite an appreciable crop this season. It is surprising that this fruit is not more widely grown for market. The Morello is self-fertile, extremely prolific, and later in blooming than the sweet Cherries, so that it is more likely to escape frost and to bear regularly. Little pruning, if any, is required after the first two years, but if space is limited as much as possible of the older wood that has borne fruit may be cut out after the crop has been gathered, or in September. I have seen Morello Cherries of bush form dying back very badly; so probably they are not a crop that can be grown in all districts.

PICKING ARRANGEMENTS.

The picking of tree fruits now begins in real earnest, and its organisation, so as to deal with all varieties to the best advantage, is not a very easy matter, particularly as pickers become scarcer every year. I grow a considerable acreage of Beauty of Bath and of Rivers' Early Prolific Plums, and both need attention at the same time. It generally comes to picking over the Apples once to get the ripest, then clearing off the Plums before finishing the Apples. There are, however, showery days and dewy mornings when Apples may be picked but not Plums. Fortunately there is very little ladder work to be done, most of my trees being of bush form on a three feet stem; but high steps are frequently required. These are made on the place in the form of a pointed ladder with a wide base, with a pole hinged at the apex. Steps of this

kind stand well on uneven ground, and can be pushed well up into the trees. The women pick Apples into their aprons, tying the bottom corners to the waist-band so as to form a kind of bag. It sounds rather a rough method, but I have not been able to find any plan which bruises the fruit so little. All kinds of bags and baskets which I have tried cause more bruising. From the aprons the Apples are tipped into trays of the kind commonly used for sprouting Potatoes. These are very convenient for stacking on a van and in the packing shed. For Plums the aprons are hopeless, as they rub off all the bloom. The wooden baskets known in Sussex as "trugs" are used. But these are too heavy and awkward to carry up the steps. For this purpose small galvanised pails are handy, particularly if wire hooks are fitted to the handles for hanging on the steps or the branches. The Plums are poured from the pails into the "trugs," and carried to the grading table. All Plums are graded and packed in the orchard, as they must be got to market without delay; but Apples are carted to the packing shed.

WINDFALLS.

The gale towards the end of July brought down a great many Apples, which seem to drop very easily this season. Quite late varieties such as Bramley's Seedling, shed much fruit. There is a marked difference in varieties in this respect. Those with fairly long stalks seem to hang best. There are few windfalls of Allington Pippin, Gladstone, Lane's Prince Albert, and Lord Grosvenor, which have long stalks, whereas the short-stalked Beauty of Bath, Bramley's Seedling, and Blenheim Pippin drop badly. The worst of all in my experience is Norfolk Beauty, more than half of which fell in the recent gale. Sorting over muddy windfalls is a slow and miserable business, with very little reward at the finish. Windfalls from a grass orchard are cleaner and better, but they always lack the bright appearance of gathered fruit. It is only at the start of the season that windfalls are worth bothering about. Later on they are sold to hucksters just as they come from the orchard. I am not sure that it would not pay best to let pigs clear them off the ground, and so prevent the wretched things from glutting the markets. The gale thinned out Plums as well, even late varieties, which could ill be spared. All fruits seem to drop easily this year. *Market Grower.*

ENTOMOLOGICAL CONGRESS AT ZURICH.

THE third Entomological Congress opened at Zurich on the 19th of July and continued until the 25th. Over two-hundred delegates attended, comprising representatives from nearly all countries. The largest contingent was the British and Colonial, numbering sixty-seven, including delegates from all the recognised institutions.

On Sunday evening the delegates were received and entertained by the President of the Congress, Dr. A. von Schulthess, and the Vice-Presidents, Drs. Pictet and Schneider-Orelli, in one of the old Guild Houses on the banks of the river Meise. From Monday to Friday the morning sessions opened at 9 a.m., continuing until 12.30 p.m., and in the afternoons from 2.30 until 4.30 p.m. The mornings were devoted to general papers which were delivered in the great Hall of the University and the afternoons were given over to special sections:—(1) morphology, anatomy and physiology; (2) systematic and distribution; (3) nomenclature and bibliography; (4) biology and development, and (5) applied entomology.

On Monday morning the President and

Rector of the University opened the Congress and were followed by Dr. Ris who gave an exhaustive account of the geographical distribution of insects in Switzerland.

Section 5 was devoted to papers dealing with insect pests and methods of control. There was no meeting of this section on Monday, but in the afternoon, under Section 4, Dr. Davidson (Rothamsted) dealt with the sexual and parthenogenetic phases in the life cycle of *Aphis rumicis* L. (Bean Aphis), illustrating his remarks with lantern slides. The winter host is the Spindle tree (*Euonymus europaeus*) and the summer hosts are many, the most important of which is the Broad Bean. The factor underlying migration from one species of plant to another is due to some physiological change in the cell sap, whilst conclusions point to the great effect that temperature has on the production of sexual forms.

Under artificial conditions a continuous parthenogenetic (asexual) phase can be induced by keeping *A. rumicis* on Bean plants all the year round. The important lesson to be drawn from Dr. Davidson's remarks is the necessity of co-operation between entomologists and other scientific workers, especially plant physiologists and bio-chemists, whose object would be to solve the many unknown problems and determine the factors which underlie (i) insect migration, (ii) the production of sexual and asexual forms and (iii) the resistance and susceptibility of plants to the attacks of phytophagous insects, the solving of which will enable workers in the field of applied entomology to devise better means of control than are at present available.

On Tuesday afternoon, Professor McDougall (Edinburgh) dealt with the life history and habits of the Ox Warble flies, and illustrated his remarks with lantern slides and samples of leather ruined by the attacks of *Hypoderma bovis* and *H. lineata* also *Hypoderma diana*, a species attacking deer.

Professor Trigardh, the well-known Swedish entomologist, opened the Wednesday morning session with a paper on "Some methods of research in Forest Entomology." He divided the pests of trees into two classes:—(i) primary agents, those that feed openly by devouring or sucking the leaves, and (ii) secondary agents, those insects whose attacks are less noticeable, the wood-borers and bark beetles. The point was emphasised that bark beetles are necessarily secondary agents following damage by any one or other of the following causes, viz.: defoliating insects, fungous and bacterial diseases, drought, forest fires, snow and wind-break, and insufficient clearing where slash and unwanted trunks are allowed to remain on the forest floor. The lecturer endorsed Dr. Davidson's opinion in that the co-operation of organic chemists was urgently needed and whose assistance would enable us to determine the change in cell sap of felled and unhealthy trees which makes them attractive to bark beetles.

A series of lantern slides showed typical damage by bark beetles and the method by which the species responsible can be determined.

The Sectional Vice-President, Mr. T. B. Fletcher (Indian Government Entomologist) in his concluding address gave a short account of forestry conditions in India where the difficulties experienced are far greater than in Europe on account of the vast areas and the unknown insect fauna.

In the afternoon, Dr. Munro (Entomologist to the Forestry Commission) spoke of the recent work done by Chrystal and himself on the Douglas Fir Chermes (*Gilletta coolayi*, Gillette). This species attacks the Sitka and Engelmann's Spruces and the Douglas Fir, and is widely distributed in the south and west of England, and locally in the midlands and north, and in Scotland. In Britain, it is found on the Douglas Fir on which it reproduces parthenogenetically, and, although both male and female forms have been found, they have failed to produce offspring. There are two

broods, one in early summer and the other in early autumn, the latter hibernating as first stage larvae on the needles. Dispersal is by means of infested nursery stock, wind, mammals and man.

On Thursday afternoon, Dr. Faes (Director of the Federal Viticultural Station, Mon Calme, Switzerland) gave an account of the Fluted or Cottony-cushion scale (*Icerya purchasi*), a species which for many years threatened the Orange and Lemon groves of California with ruin. This coccid has been introduced into several European and near eastern countries, but is comparatively new to Switzerland where it attacks, amongst other plants, the Mimosa.

Professor Prell (Germany) followed with a paper on the polyhedral disease of insects, a somewhat unknown disease which is neither of a bacterial or protozoan nature. The polyhedral bodies are found in the cell nuclei of the victims. The results of this special research were explained, and the development of the bodies within the nuclei and along the blood stream were figured.

Mr. Urich (Entomologist at Trinidad) was the next speaker, on "Some Aspects of Economic Entomology in the Tropics." The lecturer showed that the stereotyped methods of control practised in temperate countries were often quite useless in the tropics on account of the wet and dry seasons, the different habits of many pests and the question of native labour. The chief crops are Cacao, Coffee and Sugar Cane. There is a decided preference for the use of dusts rather than washes owing in many cases to the scarcity of water in the plantations. Flowers of sulphur are extensively used against mites on Citrus crops. The economic service is in the fortunate position of reporting immunity from introduced pests, and are able to concentrate on their particular insect fauna. One of their chief pests are Chrysomelid beetles, on account of the habit that certain species have of devouring the young developing leaves, making control by means of stomach poisons very difficult unless persisted in, and this is not an economic proposition.

The Friday morning session was opened by Mr. Fletcher (Entomologist to the Indian Government) who gave an account of the organising and administrative work in India.

On the final morning, the business part of the programme was concluded, and the various resolutions drawn up by the several sectional committees were discussed and voted upon. Many of the resolutions dealt with the question of nomenclature, and suggestions were made whereby the systematist's ship may be saved from the tumultuous seas of national differences. It was agreed upon that entomology received far too little recognition and attention in universities where it was considered to be the Cinderella of zoology.

It was important that the two aspects, systematic and applied work, should be correlated and placed upon a firmer basis. Another suggestion was the foundation in every country of a central library, similar to the Concilium Bibliographicum at Zurich, where records would be kept of work done by specialists throughout the world in every branch of zoology.

The library at the Imperial Bureau of Entomology (London) was considered a step in the right direction, but it was felt that a central library should include systematic as well as applied work.

The committee of the applied entomological section drew up a resolution, which the meeting passed, that pressure should be brought to bear on the various Governments so that grants could be obtained for the institution of co-operated work between all scientific workers, especially in the field of biology. Without the assistance of plant physiologists and chemists the complete elucidation of problems facing the economic entomologist would be impossible.

Arrangements were made for the delegates to visit the Land and Forest Institute, where

collections of agricultural and arboricultural exhibits are housed. In this building, Dr. Corti had arranged his famous collection of palaearctic species of *Agrotis* (the larvae of many species are the well-known surface caterpillars or cutworms). Visits were also made to the zoological museum attached to the University and the Concilium Bibliographicum, where the famous recording system is established.

The organising committee is to be congratulated on the general excellence of the arrangements. The social side of the Congress was not forgotten and included a banquet held at the Dolder Hotel, on Friday, and evening visits to various parts of the delightful city where delegates could meet and talk over matters of mutual interest. There were also excursions on the Lake and to the summit of the Uetliberg (two-thousand feet), and the week-end following the Congress, the delegates and their wives were given the opportunity of viewing some typical Swiss scenery.

The *Transactions* of the Congress will be obtainable in 1926, and the next Congress was provisionally fixed to be held in the United States.

PROPAGATION FROM OLD FRUIT TREES.

IN the endeavour to get grafting or budding material from old Perry Pear trees, one is sometimes confronted with the impossibility of obtaining young shoots to use, where nothing but old wood or old, complex fruit spurs are to be found.

There are several courses open to effect the desired purpose. (1) A portion of the tree may be cut back, given permission to do so, with the view of inducing the formation of shoots; in one case, related to me, a fairly heavy manuring preface the result, without any cutting, but such treatment compels delay until the next season ere grafting material is secured. (2) Old wood may be used for the grafts, with perhaps some attendant risk of carrying various disease germs (when shoots are collected for spring-time grafting, I usually give them a good wetting with chinolin-copper acetate, as a preventive), but the old time artists who practised this method are now few. I have been promised a demonstration of the technique of which possibly I may be able to give some account later; for the present, suffice it to say, that the mode is now known as "Stock" "Wedge" or "Mallet" grafting, and pieces not thinner than the finger are inserted. It would appear that the men of Herefordshire have long practised this art, for Evelyn (*Pomona* 1670, Ed. p. 11.) remarks "In Herefordshire they do frequently choose a *Graff* of several year's growth; and for the *grafting* of such large *Stocks* as are taken out of the *Woods* or *Nurseries*, and fitted into rows for *Orchards*, they choose not the *Graffs* so small as in other Countries they require them;" The method is not mentioned in Baltet, *L'Art de Greffer* 1882.

(3) The "Greffo Girardin" may be used; this is a simple blossom spur treated like a bud and inserted in August, no care being taken to remove wood from the cut graft. Here again there is likelihood of delay in getting a shoot or twig as, normally, its first effort is to fruit directly: it is claimed that extra large 'show table' fruits may thus be obtained in the first season, but my limited trials have not produced any fruits of specially good size.

(4) A site for obtaining buds is available, and so far as my search in literature extends, one which has not previously been utilised. The blossom truss of the Pear and Apple has a main stem from which arise the individual flower stalks or pedicels; when a fruit or truits are established this main stem becomes

swollen and fleshy, and eventually becomes the organ known in France as the "Bourse," and called two hundred years ago by John Lawrence the "Knob." From its later history I call this part the "bourse area or zone." It is an interesting part and well worthy of further study; besides carrying the blossoms and, later, the scars whence their pedicels have parted, a number of leaves are present, though sometimes these may have fallen; these leaves have buds at their bases. The bourse area buds may remain, (1) dormant, or (2) they may progress to form one of the many forms of "dard"—that is the young stage of a fruit bud—for which I propose the use of the term "baby fruit bud," or more shortly "baby bud," which in the second or a later year become "child bud" or "adult" as actual fecundity is developed; (3) Others may shoot out and form a long "dard" or eventually a twiggy growth (brindille), both of which are often fruitful. The type of leaf borne on the "bourse" zone is also interesting and may approach to or be aberrant from the type leaves of shoot and spur, in general perhaps partaking of the shapes of the basal leaves of these organs.

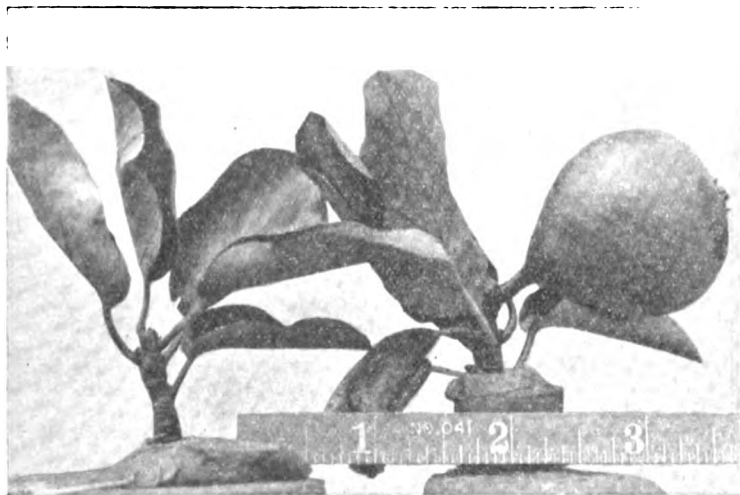


FIG. 52.—GRAFTS OF OLD PERRY PEARS.

The two specimens (Fig. 52) were collected on August 23, 1924, with the note that no shoots or scions were available, and as the idea of budding from them had not occurred to me, they were more or less cavalierly treated. It will be seen that there is not very much room to cut buds, but after wasting some in trial cuts, two were inserted in a suppy upward main shoot of a Pear tree (*Bergamotte d'Espèren*) against a wall in my garden. The upper of these two buds took well and has now grown to a fine shoot a quarter-of-an-inch in diameter and twenty-seven inches long, enough to give a number of buds for more orthodox work. The lower bud, though at first it appeared to take, never grew, perhaps because a fairly herbaceous part is needed for so suppy a bud—at any rate it might be worth while keeping the possibility in mind in further trials. Lower still on the stem a "Girardin" was placed; this also failed, I think owing to defective waxing, but it was rather difficult to get a passably suitable graft.

Whilst admittedly only one successful insertion has been made by the method, it suffices to show that it is practically possible. Other with more dexterous hands and taking the ordinary collecting precautions may be able to record a higher degree of success. Finally, I may add that the shelter of a wall or of a few boards may make a sufficient temperature difference to lead to success in more orthodox procedures, when in the open, failure is recorded. *H. E. Durham.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. 111-116).

SCOTLAND, N.

ROSS-SHIRE.—There was a splendid display of blossom on all fruit trees in the spring, which was rather surprising after the wet autumn of 1924. Late Apples are a good crop. Pear trees set scarcely any fruits, and some Plum trees which were covered with bloom have set but an average crop, owing, I presume, to the exceptionally heavy and cold rains during May. Black and Red Currants are very good crops, and the berries are of good quality. Strawberries were an average crop, but the fruits were rather small. Raspberries are a very good crop. Our soil is of a clayey nature and very damp. *John McIlrose, Ardross Castle Gardens, Atness.*

SUTHERLANDSHIRE.—There was a wonderful display of blossom on Apple, Pear, Plum, and Cherry trees, but with the exception of Plums,

year stood the crops in good stead when dry weather set in later. Strawberries did not swell their later berries, but these fruits have done fairly well on the whole and the berries were of excellent quality. Black Currants are a fairly heavy crop, although a goodly number of the berries dropped soon after setting. American Gooseberry mildew is still held in check here by the simple process of dusting the bushes, after a slight rain, with lime that has been slaked a few days previously. The best time to apply the lime is just after the fruits have set. *J. B. Peijfers, Panmure Gardens, Carnoustie.*

KINCARDINESHIRE.—The Strawberry crop was excellent. Small fruits are just an average yield except in the case of Black Currants which promise well on bushes that are not affected with disease. June was very dry; rain was only registered on eight days, with a total of 1.23 inch during the month. *William Thomson, Ury House Gardens, Stonehaven.*

PERTHSHIRE.—The dry season has suited the crops in our heavy soil. Small fruits are exceptionally plentiful, with Black Currants a very heavy crop, and the berries of excellent quality. The Apple and Pear crops are very poor, and the quality of the fruits is not good. *Jas. Tunstall, Keir Gardens, Dunblane.*

—The crops of Apples, Pears and Plums are decidedly under the average. Cherries are a fair average crop and the fruits are of fine quality. Small fruits are plentiful, and Strawberries over the average, the quality of the latter being all that could be desired, the long continued drought having had no ill-effects on this crop. Large fruits flowered sparsely; the flowers were weak and in many cases did not set, and many of the fruits that did set dropped when they were partially formed. Insect pests have not been troublesome this season, and the trees and bushes have made fine, healthy growth. *Malcolm Macnaughton, Scone Palace Gardens, Perth.*

—During the flowering period, fruit trees of all kinds gave promise of heavy crops, but the continuous rains were very detrimental to the setting of the fruits. Early Apples are very plentiful, but late varieties are very thin. On the whole, the fruits are clean and healthy. Pears are very scarce. Plums are an average yield, with the exception of Victoria and Pond's Seedling, which are heavy crops. Small fruits are very good, with the exception of Gooseberries which are scarcer than usual, but of good quality. Raspberries are good, but many of the fruiting canes have died. The autumn and winter of 1924 being very wet and sunless the canes did not ripen properly. Insect pests have not been very troublesome until lately, when green-fly made its appearance. *James McGregor, Rossie Priory Gardens, Inchture.*

STIRLINGSHIRE.—The abundance of blossom on all fruit trees gave promise of bountiful crops, but the prospect was spoiled by incessant rains throughout the month of May. With the exception of wall trees, Apples, Pears and Plums failed to set. Strawberries are variable, the long drought, in some districts, hindering their proper development. Raspberries and Currants are splendid crops. *J. D. Cunningham, Duntreath Castle Gardens, Blanehead.*

SCOTLAND, W.

AYRSHIRE.—The fruit crops in this locality are poor, excepting small fruits, which are yielding good average crops. Apple and Pear trees blossomed well, but the fruits did not set freely owing to cold winds in May. The only sorts of Apples that have average crops are Worcester Pearmain, Beauty of Bath and Lane's Prince Albert. Pears Buerre Diel, Jargonelle, and Catillac, have fair crops on trees in a sheltered position. The soil is rather light resting on a gravel bottom. *D. Buchanan, Bargany Gardens, Dailly.*

I cannot record good crops of fruits. Apples and Pears are, however, average crops, and Victoria Plums are very numerous, but Cherries, both dessert and cooking varieties, are very scarce. We have a good average crop of small fruits. Alton Pine Strawberry is not promising so well as usual, many of the crowns having died off during the winter in the older bed. Loganberries are carrying a bumper crop, but Raspberries are only moderate in numbers. Our soil is of a sandy nature with a sub-soil of gravel. *W. F. Game, Dunrobin Gardens Golspie.*

SCOTLAND, E.

ABERDEENSHIRE.—The summer and autumn of 1924 were wet and cold, and in consequence the wood and fruit buds of fruit trees did not ripen, hence the shortage of blossom in the spring of 1925, whilst the long spells of very wet and cold weather caused a number of the blossoms that did develop to drop before the fruits set. *James Grant, Rothienorman Gardens.*

BANFFSHIRE.—The fruit crops are very good this season, owing to absence of frost in the spring when the trees were in flower. Cherries are, perhaps, not so large as usual, owing to the dry weather in the latter part of May, and greater part of June. Other fruits are all of an average size. *George Edwards, Ballindalloch Castle Gardens.*

FORFARSHIRE.—Most fruit crops in this district have done well. The large amount of rain which fell during the early part of the

BUTESHIRE.—All the larger varieties of fruit trees seem to have suffered greatly from the excessive wet and absence of sunshine of the summer and autumn of the past two years, and therefore were not able to bear the strain put upon them at the flowering period. There was ample blossom on the Pear, Plum and Apple trees, but the flowers did not open properly, and there were excessive rains at the time of flowering. I notice a good deal of "die back" on our fruit trees this year. Bush fruits are all fairly good, with the exception of Raspberries, which seem to have suffered most; still, we have a fairly good crop of Raspberries. Strawberries are wonderfully good. A total of 51.81 inches of rain and 267 rain days in the year is not conducive to good fruit growing. Our soil is a heavy loam overlying marl rock, consequently the ground is usually very wet.—*J. Davidson, Ardenraig Gardens, Rothesay.*

DUMBARTONSHIRE.—There was a fine show of blossom on Apple, Pear and Plum trees, but we had an excessively wet May; since the end of May we have had practically no rain, and more than the average amount of sunshine. The Strawberry crop promised to be a heavy one, but the continued drought caused the berries to ripen very quickly, and we only gathered the berries that set first. Cherries and Apples are lighter crops than they have been for many years past. Pears also are a thin crop, and Plums nothing to boast of. *John Brown, Cairndhu Gardens, Helensburgh.*

DUMFRIESHIRE.—Strawberries suffered for want of rain, and the fruits were smaller than usual but of good quality. Gooseberries and Raspberries are extra heavy crops. Black, Red and White Currants are also above the average in yield. Our soil is a sandy loam, and this year it became so hard as to need breaking with a pick before it could be dug; in all my experience I never saw ground so hard. *James McDonald, Dryfeholm Gardens.*

ENGLAND, N.E.

DURHAM.—The fruit crops generally are very poor this season. Apples, Pears and Plums promised well at one time, the trees being covered with fine blossom, but the almost continuous rains while the flowers were expanded had a disastrous effect. Moreover, last year's cold, wet weather might have much to do with the failure of the fruits to set. *Edward Tindale, Ravensworth Gardens, Gateshead.*

—All our fruit trees gave promise of heavy crops, as they were smothered in blossom, but the wet period we had when they were in bloom together with cold winds, spoiled the set. The few Apples and Pears that did set have been affected by caterpillars, in fact, some of the trees are nearly bare of foliage. Of Plums, the best cropped varieties are Victoria, Early Rivers, and Golden Gage; other varieties are poor. The best cropped Apples are Stirling Castle and Cellini, all others are practically failures. Pears are a complete failure, as also are Black Currants. Red Currants and Strawberries are enormous crops and Gooseberries are very good indeed. Our soil is of a sandy nature and light in texture. *J. A. Woods, Beamish Park Gardens, Beamish S.O.*

NORTHUMBERLAND.—All the fruit crops promised well, for the trees were covered with blossom, but owing to continued dry weather, the foliage was eaten by pests, caterpillars being the worst enemies. Strawberries looked well and the plants flowered freely but one half of the fruits never matured owing to the continued drought. At the time of writing Raspberries promise to be a failure unless rain falls within the next few days. Apricots have done very well, the fruits being formed before the drought set in. The only variety of Apple that has an average crop is Cox's Orange Pippin. *William McCombie, Newton Hall Gardens, Stocksfield-on-Tyne.*

(To be continued.)

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Agave americana.—I have in my garden a specimen of *Agave americana*, so frequently called the Century Plant. It is now in bloom and has a branching spike arising to a height of about twenty-four feet. The plant has been in the garden between thirty and forty years and, of course, has never flowered before, otherwise, as is usual in this case, it would not be alive. *W. Hosking, Michigan Villa, Gwinear, Hayle, Cornwall.*

Camassias in Grass.—Quite recently Mr. Barnes, the gardener at Eaton Hall, Chester, was judging at our Whitechurch Show and I had a talk with him about *Camassias* in grass. He told me how at the beginning of the war a varied lot of bulbs had been planted in grass at Eaton, and that ever since they had had to look after themselves. Practically the only ones which now survive are the *Camassias*. I think he said he had pale blue and dark blue sorts. They grow strongly and flower well each year. As might be expected from such prolific seeders, they not only hold their own but increase and form colonies. I think they are rabbit proof. Anyhow planting *Camassias* in grass is an experiment well worth trying. Just think: Daffodils over; blue not too plentiful a colour anywhere, almost unknown in grass; but fine masses of it, thanks to *Camassias*, are now possible. *Joseph Jacob.*

A Giant Sycamore.—Having been interested in the correspondence in your columns regarding the largest trees in Great Britain, I think your readers may like to know the measurements of a giant Sycamore which stands in our grounds. This particular tree has a girth of twenty-six feet at a height of six feet from the ground. At nine feet high it branches into eighteen separate trunks, each of which is as large as a big tree. The whole tree covers an area of more than 11,500 square feet and has been calculated to contain over 1,000 cubic feet of good timber. I would like to know how this tree compares in size with other similar trees in different parts of the country. *A. Wardle, Loton Park Gardens, Alberbury, Shrewsbury.*

Black Currants.—In reply to Mr. Pearce's remarks in *The Gardeners' Chronicle*, p. 75, concerning the rooting of Black Currant cuttings in July, I may state that my observations referred to small batches of cuttings, just sufficient to keep up the supply of bushes in a private garden. Raising plants thus early is interesting work, and the extra labour it entails is very small; I have carried it out successfully for many years. The rooting of cuttings in autumn is taken for granted and everyone is well acquainted with the method. Where bushes are in demand, as in Mr. Pearce's case, by the thousands, the grower would naturally defer propagating until autumn. *E. Neal, Crawley.*

Primula farinosa.—Has anyone noticed the following curious habit of this *Primula* during hot, sunny weather? In the rock garden it invariably reverses its leaves so that the underside is uppermost, showing the farina, giving the plant a white appearance and presenting a distinct effect. It does not flag but purposely turns its leaves (as I think) to ward off the heat of the sun. The leaves gradually regain their normal position by early morning and again turn so soon as the sun reaches them during the day. It has occurred to me that the covering of farina on the underside of its leaves prevents undue transpiration and so the leaves present this portion to the sun's rays during the heat of the day. *C. F. Wood, The Warren Gardens, Hayes, Kent.*

SOCIETIES.

BRITISH MYCOLOGICAL.

THE British Mycological Society's excursion this year was held at Cambridge during July. All arrangements were made by Mr. F. T. Brooks, Chairman of the Phytopathological Committee of the Society.

On the opening day Mr. N. J. G. Smith demonstrated the four *Helminthosporium* diseases which affect cereals in Britain. In certain plots of Barley, plants rendered useless by Leaf-stripe disease (*Helminthosporium gramineum*) were conspicuous. Comparisons were made between this disease and the less malignant Leaf-spot disease of Barley (*Helminthosporium teres*) which was present in the same series of plots at Cambridge. Two types of damage caused by the *Helminthosporium* disease of Oats (*H. Avenae*) were pointed out, viz., seedling-sickness and Leaf-spot. Specimens of the Foot-rot of Wheat, which is caused by *Helminthosporium sativum*, were shown, along with *Ophiobolus* damage, which is very similar. There were also on view pycnidial and perithecial forms of various species of *Helminthosporium*. Features of the vegetative growth of the different species were illustrated by a series of cultures.

Mr. W. R. Dillon Weston discussed "The Control of Bunt in Wheat." Experiments that have been carried out in the past on treating seed Wheat to prevent Bunt (*Tilletia tritici*) in Wheat have demonstrated that treatment with formaldehyde is the method most effectual in killing the Bunt spores that adhere to the grain. Of a very badly bunted sample of Wheat sown in experimental plots on the Cambridge University Farm in November, 1924, the grain treated with formaldehyde at the strength of one in six hundred and forty reduced the infection from 63.4 per cent to 0.2 per cent. (That is, the untreated plot contained at harvest 63.4 per cent. of bunted ears, whereas the grain treated with standard 40 per cent formaldehyde at a dilution of one part of formaldehyde to six hundred and forty parts of water contained only 0.2 per cent of bunted ears). Although this strength is twice as weak as is usually recommended, yet the control appeared almost perfect. The same sample of Wheat treated with copper sulphate solution (2½ per cent.—i.e., ¼ lb. copper sulphate per gallon) reduced the infection from 63.4 per cent. to 6.5 per cent. Whereas with the formaldehyde the germination was not affected, it was lowered four per cent. by the copper sulphate treatment. In both these cases the sprinkling method was used. In comparison with these results a certain proprietary article reduced the infection to eight per cent.

In the United States of America it is stated that copper sulphate represses root growth and formaldehyde represses plumule development. It is on this account that the use of fungicidal powders has been largely adopted in that and other countries. In order to test the value of these dusts in controlling the disease, trials have been carried out at the University Farm. Various chemical dusts were used, such as copper carbonate, copper acetate, copper stearate, copper sulphate, sulphur, etc. Although at the time of the visit no actual counts had been made on these plots, it is obvious that the control is only partial with the very heavily infected samples that were sown. No farmer, however, sows such heavily infected samples as were sown at Cambridge on an experimental scale—it being an axiom of good farming to start with clean stocks; moreover, it has been shown elsewhere that infection varies with the spore load. The chief advantages of a dusting method would appear to be: (1) Seed could be treated when desired and kept stored, or it could be sent out already treated by the seed merchant. (2) There would be no risk of injury to the seed or a decrease in germination. The disadvantages (if seed were not purchased already dressed) are the outlay on a dusting machine, and a slight increase in cost.

Mr. F. L. Engledon then conducted the party through the cereal-breeding plots, and demonstrated the investigations in progress, concerning the inheritance of disease resistance, and made, in particular, reference to the transmission of susceptibility to yellow rust (*Puccinia glumarum*) in Wheat. Attention was also directed to the interesting collection of varieties of Wheat, and to an elaborate experiment to test comparatively the yield of new varieties of Barley.

The party then returned to the Botany School and from there to the Hall of Emmanuel College. After lunch, some time was spent in the Fellows' Garden.

The afternoon was occupied by a visit to the fruit plots and greenhouse on the University Farm. Here Mr. Brooks gave an account of his work of Silver-leaf Disease in which Messrs. Bailey, Buddin, Storey and Moore have assisted. At present the research appears to be carried out under ideal conditions. Infection by spores of *Stereum purpureum* is possible throughout the year, except June, July and August. If an emulsion of spores be placed on the cut extremity of a twig, the symptoms of Silver-leaf may be seen within two months. There is a violent reaction on the part of the host and gum appears in the cells: the gum is produced in such quantity in June, July and August that it acts as an effective barrier to the spread of the fungus. Many trees recover from the disease naturally, more than fifty per cent. sometimes doing so when there is good growth. Similar facts are encountered with reference to resistance. For instance, the Porshire Plum is readily infected under certain conditions, but recovers the following year; it forms gum barriers with great facility. In another series of experiments it has been found that *Stereum* infects wounds immediately after exposure up to one hundred per cent., but that successful infection decreases with longer exposure of the tissues, so that it is rarely effective after a month, and never after three months. It is obvious, therefore, that the best time to cut out invaded tissues is in June and July because this exposes wood at a time when it is not easily infected; sporophores of *Stereum purpureum* rarely produce spores during those months and the exposed tissues become immune from infection after a few days. For the protection of exposed tissues none of the usually recommended substances is effective. For example, four or five days after an emulsion of spores is placed on the surface of a cut branch treated with gas tar, fungus mycelium can be found in the tissues. Antifouling paint (used for the bottom of ships) was found to be effective, but, unfortunately, is considerably toxic to tissues, causing dying back of the bark. Soft grafting wax is also efficacious, but is not easy to apply to large wounds, though for work in the nursery it is quite satisfactory, causing no ill-effect to tissues. Synthetic paint has been elaborated and so far has given extremely satisfactory results. Ring-barking is often advocated as a cure for Silver-leaf, but a series of experiments give figures which suggest that the method is of doubtful value. Other experiments were outlined on mycelial infection, effect of soil treatment and so on. It has not been found possible to reproduce all the symptoms of the disease by using an extract of the fungus.

Mr. R. C. Woodward then demonstrated his work on Apple mildew. The increasing severity of attacks of Apple mildew, and its widespread distribution, has called for an investigation for further information relating to its life history, particularly the mode of hibernation in order to facilitate more advantageous control measures. Owing to the relative abundance of perithecia (especially on certain Apple varieties) special attention has been paid to the rôle taken by these bodies in carrying the fungus through the winter months. During the seasons 1922-23, 1923-24, and 1924-25, perithecia were always found in a non-functional condition. Many of them contained malformed ascospores, others were filled with spores of an extraneous fungus while the remainder appeared empty from

about January until after mildew was apparent on the trees. It does not appear that they are important over-wintering organs under English conditions.

It has been thought that the fungus hibernates between the scales of buds in some form unknown, but possibly as mycelium. The present researches have shown that fungal threads of the mildew become established not only between the bud scales, but between the tissues to the very centre of the bud. These mycelia are provided with haustoria which serve as organs of absorption, and remain in a living condition throughout the winter; long chains of spores have been observed in the centre of buds prior to opening. Current growth, produced in the spring, bears infection when it is produced from a bud which harbours the fungus through the winter in mycelial form. On emergence of the young twig it is seen to be covered with a more or less densely woven matting of fungal threads, often through its whole length. Leaves are subsequently produced thereon which if not already mildewed become infected through invasion of fungal mycelia from the twig along the leaf petiole, or by spore infection from a not far distant source. When these leaves have expanded, buds appear in their axils, and are invaded by the fungus previously established on the twig. The axillary buds so situated are an easy prey to the mildew. Fungal threads find their way to the apex, which is left more or less unprotected because of the loose arrangement of the bud scales, and find entry there. A fungal association is set up and maintained there until the following spring, when the same procedure may be repeated.

In view of this new conception of the time and method of infection of buds, experiments are being carried out on the efficiency of sprays applied before the mildew has become established within the axillary buds, that is between the time of emergence of the current growth and the time when the axillary buds have reached a stage favourable to infection from mycelium on the twig. So soon as the mycelium is entrapped in the bud by the later formed and more fully developed bud scales, spraying is, of course, of no avail, owing to the protection afforded in this way to the mildew within the bud from contact with the spray liquid.

The party then returned to the Botany School for tea. In the laboratories preparations had been set up by Messrs. Brooks, Moore, N. J. G. Smith, and Woodward illustrating their work. In addition, Mr. S. M. Wadham showed an exhibit illustrating the life history and methods of culture of *Sclerotinia trifoliorum* (the cause of fungous Clover sickness). Methods of inducing the formation of the black sclerotia, and of causing these "sclerotia" to germinate under artificial conditions, were demonstrated. Mr. Alex. Smith demonstrated perennial mycelium in various rusts; incidentally he has shown that the mycelium of *Puccinia Menthae* is not perennial as is usually thought; re-infection takes place each year. Mrs. Kidd showed an interesting exhibit of fungal invasion in Apples in relation to senescence, which was illustrated by several graphs. Amongst other exhibits were a fine specimen of *Peridermium Pini* var. *corticola* on *Pinus sylvestris*, and a parasitic *Penicillium* on *Gladiolus*.

After tea, the Molteno Institute was visited, where a fine exhibit of fungi parasitic on man had been staged by Drs. Hare, Kielin, Tate and Castellani.

In passing a vote of thanks at the end of the meeting, Mr. J. Ramsbottom congratulated Professor Nuttall on starting work in medical mycology, a subject of great importance but one much neglected in this country. A hearty vote of thanks was also passed to all who had helped to make the meeting such a success, particularly to Mr. Brooks and Mr. Line for their hospitality. It was very interesting to view the mycological work now being carried on at Cambridge, and it was particularly pleasing to the Cambridge men present at the meeting to find all branches of mycology being studied with enthusiasm and ability. The training which it is now possible to obtain there will have its effects all over the Empire.

ROYAL HORTICULTURAL.

AUGUST 11.—The usual fortnightly meeting was held in the Society's Hall, Vincent Square, Westminster, on Tuesday last, and the exhibition in connection with it was of a varied and interesting character, all sections of horticulture being represented by good exhibits. There were fewer Orchids than usual, and only one award was made by the Orchid Committee. In the floral section, *Gladioli*, *Phloxes*, *Roses*, *Carnations* and seasonable border flowers were the chief subjects shown. The Floral Committee recommended eight Awards of Merit to novelties, and the joint *Dahlia* Committee, which met for the first time this season, selected two varieties for trial at Wisley.

In the fruit and vegetable section there were outstanding exhibits of *Tomatos* and pot *Plums*, whilst a splendid exhibit of *Nectarines* was awarded the Silver-gilt Bunyard Medal.

Orchid Committee.

Present; F. J. Hanbury, Esq. (in the chair), Messrs. Gurney Wilson (Secretary), R. Thwaites, E. R. Ashton, T. Armstrong, J. E. Shill, Fred. K. Sander, and Arthur Dye.

AWARD OF MERIT.

Brasso-Cattleya Corrientes (B.-C. *Ilenc* × *C. Hardyana*).—A big flower in all its parts. The sepals and petals are pale rosy-mauve and the lip, which is exceedingly beautiful, is a deeper rose spotted with gold and having basal veining of a deeper tone. The lip is fimbriated to a very high degree whilst the edges of the petals are beautifully waved, especially on the upper margin. Shown by Dr. M. LACROZE, Bryndir, Roehampton.

GROUP.

The only collection was exhibited by Messrs. SANDERS, St. Albans. Their exhibit included many fine *Cattleyas*, amongst them *C. Hardyana alba* conspicua, with a very fine purple lip that is golden-yellow in the throat; *C. Eleanor alba*, St. Albans variety, *C. Hardyana Bruges Belle*, and *C. Triumphans* (Rex × *aurea*). They showed a fine *Odontodia* in *O. Granadier* var. *Perfection*, with flowers of brilliant scarlet; also a fine spike of *Vanda coerulea*; *Selenipedium calurum* Brownii, *Trias disciflora*, which is interesting on account of its mobile lip; *Odontoglossum eximium* Australia, a handsome flower with a mauve ground heavily spotted and blotched with chocolate, and *Rodriguezia secunda*.

Messrs. BLACK AND FLORY showed three promising new plants in *Cattleya* *Hermia* with white sepals and petals and a rich purple lip which is yellow at the base: *C. Lysander* (*C. triumphans* × *C. Rhoda*) with yellow sepals and petals and violet-purple lip that is beautifully veined at the base; and *C. Helena* (*C. Kienastiana* × *C. Maggie Raphael alba*) with very solid white sepals and petals and beautiful fimbriated lip that is coloured violet-purple at the edges and orange in the centre striped with madder brown.

Floral Committee.

Present: Section A.—Messrs. H. B. May (in the chair), Hugh Dickson, H. J. Jones, J. M. Bridgeford, J. F. McLeod, W. H. Page, M. C. Allwood, D. Ingamells, F. Streeter, Chas. G. Pearson, W. P. Thomson, G. W. Leak, Jas. B. Riding, W. B. Gingell, Donald Allan, E. R. Janes, D. B. Crane and Wm. Howe.

Section B.: Messrs. C. T. Musgrave (in the chair), G. W. Loder, James Hudson, G. Reuthe, George Harrow, E. H. Wilding, Reginald Cory, F. G. Preston, R. W. Wallace, T. Hay, E. A. Bowles, G. Yeld, Amos Perry, and R. D. Trotter.

AWARDS OF MERIT.

Campanula Warley alba.—A dwarf flowering variety which would be useful for the lower pockets of the rock garden or for the herbaceous border. The small-leaved plants are only a few inches high, and bear numbers of relatively large, flattish, white flowers which have two rows of petals. Shown by Messrs. M. PRICHARD AND SON.

Gilia californica.—Three small seedling plants were shown of this Californian shrub which was first introduced by William Lobb in 1854, though Douglas had previously sent home dried specimens and Coulter had also recorded it. In California it is known as the Prickly Phlox, and a popular description might well be that of a Furze with the flowers of a pink herbaceous Phlox. An illustration in the *Bot. Mag.*, t. 4872, under the name *Leptodactylon californicum* gives a good impression of the charm and beauty of a well-flowered branch. Shown by Mr. T. HAY, Hyde Park, London.

Lilium Bakerianum.—When first introduced, this beautiful Lily from Upper Burma was named *Lilium Lowii*, and under this name was illustrated in t. 7232 of the *Bot. Mag.* For the last twenty-five years or so the species has been rarely if ever seen until the present time. The specimens on view were graceful, erect plants, varying from eighteen inches to two feet in height, and crowned with a solitary drooping, widely expanded bell-shaped flower. The segments are pure white on the outer half but freely marked with tiny chocolate spots in the tube, and the flowers are pleasantly scented. The linear, deep green leaves are only a couple of inches long. The illustration referred to above shows a more robust plant bearing three flowers. Unfortunately, the species is not hardy, but requires cool greenhouse treatment. Shown by Messrs. R. W. WALLACE AND CO.

Phlox Mr. H. B. May.—A very beautiful herbaceous variety of dwarf compact habit, and producing large heads of soft mauve flowers which have short rosy-carmine lines along the edges of the petals. Shown by Mr. H. J. JONES.

Rhododendron auriculatum.—The trusses of this valuable hardy species were gathered from one of the original plants raised from seed sent by Wilson from Western Hupeh in 1900. It becomes from ten feet to fifteen feet high, and bears plenty of large trusses of widely expanded white flowers which have attractively waved margins and are very fragrant. In some of the young flowers there is a slight suggestion of blush colour at the base, and the white stalks have fine downy hairs. Shown by the DIRECTOR, Royal Gardens, Kew.

R. serotinum.—This is another valuable late hardy *Rhododendron* which produces large trusses of six to eight fragrant flowers. It is considered to be a late-flowering form of *R. decorum*, and was sent to Kew from Paris in 1899. The flowers open flatter than those of *R. decorum*, are not quite so substantial in texture, and have a small cluster of orange-buff spots on the lower segment. Also sent from Kew.

Sidalcea Hiawatha.—This is one of the many attractive and useful seedlings that have been shown at recent meetings. The plant is of good habit, about two feet in height, and bears plenty of medium-sized, satiny-crimson flowers which have a distinct white zone. Shown by Messrs. STARK AND SON.

Sphaeralcea Fendleri Hascombe var.—This is a shrubby, Malva-like plant which bears plenty of orange-coloured flowers in the axils of the lobed leaves. The specimens on view flagged badly, but it appears to be an uncommon and useful border plant. Shown by Mr. C. T. MUSGRAVE.

NEW DAHLIAS,

The following varieties, shown by Messrs. J. CHEAL AND SONS, were selected for trial Wisley.

Colgate Star.—A slightly large example of the decorative Star type, of rich crimson colour.

Duchess of York.—A well-formed single of deep orange-scarlet colour.

GROUPS.

Gladioli were again an important feature of the show. On a large wall space, just inside the entrance Messrs. SUTTON AND SONS displayed a large number of excellent varieties set up massed in large vases. Those with bright colours included Golden West, Electra, Red Emperor, and Capt. Fryatt, while Vesta Tilley, blush, with a rose blotch on the lower segment;

Loveliness, creamy yellow, shaded lilac; Yellow Standard, Yellow Hammer, Niagara, creamy-yellow, flaked with crimson lake, and L'Immaculé, white, were also admirable.

Messrs. KELWAY AND SON staged a number of their newest Gladioli, including Cecilia Kelway, a large flower of flesh-pink colour, shaded with pink; Mrs. Austen Chamberlain, flesh-pink edged with a deeper shade of the same colour, with a purple throat and orange lip; Evening Glow, of uncommon rosy-mauve colour shaded with violet; E. H. Liddell, Orchid-mauve paler in the centre; A. E. R. Gilligan, deep crimson, speckled with white in the centre; Lady Sligo, cream with an orange centre; Salmon Trout, salmon-scarlet; and James William Kelway, a vivid crimson self.

A large collection was attractively staged by Messrs. R. H. BATH, Ltd., of which the graceful *Primulinus* hybrids predominated, and these included L'Yser, Rosanna, Prince of Wales, Arlor, and Topsy. Major CHURCHER BECKWORTH, Lindfield, showed a number of his beautiful seedlings, which included Sunny-mede, Nydia, Linton and Alice Tiplady, of great beauty.

Seedlings were also prominent in the collection of Messrs. LOWE AND GIBSON, who also showed Butterfly and Souvenir, two graceful *Primulinus* hybrids. In a large collection, special prominence was given by Mr. G. G. WHITELEGG to Hermione, Hecla, Vanessa, and Atalanta of the *Primulinus* hybrids, with Maiden's Blush, Willy Wigman, Prince of Wales, and Halley of the large-flowered type. Mr. ALFRED EDWARD staged an attractive collection of *Primulinus* hybrids, including several large baskets of the rich yellow Souvenir, and the orange-coloured Vanessa.

Roses were shown in great abundance and of special merit by several growers. Messrs. ALEX. DICKSON AND SONS had massed stands of Shot Silk, Lady Inchiquin, Betty Uprichard, Richard E. West, and Scarlet Glory. The Rev. J. H. PEMBERTON, staged large vases of Isobel, Mermaid, The Adjutant, Los Angeles and other valuable sorts. Under the clock, Messrs. CHAPLIN BROS. displayed excellent stands of K. of K., Red Star, Innocence and Ophelia.

Carnations were freely shown by Mr. C. ENGELMANN, Messrs. ALLWOOD BROS., and Messrs. STUART LOW AND CO., who also staged good spikes of *Agapanthus umbellatus* of the white variety.

In a floor group, Messrs. L. R. RUSSELL, LTD., displayed *Musa sapientum*, various Bamboos, Tree Ivies, Clematis, in variety, and *Erythrina Crista-galli*, Calla (*Richardia*) Mrs. Roosevelt, *Hemerocallis*, and many other valuable border plants were shown but Mr. AMOS PERRY, who also had an extensive display of hardy Water Lilies in pans of water. The latter included *Nymphaeas* *Sumptuosa*, *Rosita*, *Colossea*, *Virginalis*, *Gladstoneana*, *Gloriosa*, *Attraction*, *Andreana* and the blue-flowered *Pennsylvanica*.

Amongst their valuable Scabious Messrs. ISAAC HOUSE AND SON included Isaac House, the darkest blue; Mrs. Isaac House, white, and Silver Queen of delightful silvery-lavender colour. Mr. T. CARLILE had good secondary spikes of Delphiniums, and the Misses HOPKINS put up a good selection of hardy border flowers. Crimsons *Powellii*, various *Heleniums*, and *Gladiolus* *Montbretias*, and perennial *Lobelias* were shown by Messrs. M. PRICHARD AND SONS.

A large collection of herbaceous Phlox was exhibited by the HON. VICARY GIBBS (gr. Mr. E. Beckett), Alderham House, Elstree, which illustrated a wide range of good colours. Near by Mr. H. J. JONES had round baskets containing such sorts as Evelyn, Dr. Charcot and Australia. Mr. G. REUTHE included trusses of *Rhododendrons* *Maddenii* and *R. Ungernii*, with his collection of uncommon shrubs, and also showed *Crimums*, *Phlox*, *Kniphofias* with other useful border plants.

Besides their *Sidalcea*, which received the Award of Merit, Messrs. STARK AND SON showed several other good novelties with Marigolds, Lupins, and Scabious; while Messrs. J. CHEAL AND SONS staged early Dahlia flowers.

Fruit and Vegetable Committee.

Present: Messrs. J. Cheal (in the chair), W. Poupert, P. C. M. Veitch, Geo. F. Tinley, S. B. Dicks, A. Metcalfe, H. Prince, W. F. Giles, T. Pateman, F. Jordan, E. Beckett, E. Laxton, G. Kelf, H. Markham, W. H. Divers, E. A. Bunyard, and A. N. Rawes.

Messrs. LAXTON BROS. exhibited a new Apple named Laxton's Leader, a cross between Devonshire Quarrenden and Mr. Gladstone. It is a round fruit of medium size, showing only a trace of the ribbing on Mr. Gladstone. The skin is dull red all over and the flesh a little more solid than that of Mr. Gladstone, but the flavour is only moderate.

Messrs. G. BUNYARD AND CO., LTD., showed thirty-seven pot Plum trees, all in perfect health, of fine shape, and carrying heavy crops. The more notable varieties were Count Altham's Gage, Denniston's Superb, Coe's Golden Drop, Blue Rock, Utility, Early Transparent Gage, Washington Gage, Victoria, Diamond and Orpington Prolific. The trees of Early Transparent Gage and Washington Gage were very freely fruited.

Messrs. DOBBIE AND CO., LTD., exhibited one hundred and twenty pot plants of Tomatoes which have been grown by them under trial. They represented eighteen varieties, of which the more notable sorts were Kondine Red, Essex Wonder and Bide's Recruit, these being the heaviest croppers; Dobbie's Champion a variety notable for its very big trusses; Cherry Ripe, a small fruited variety suitable for dessert purposes; and Golden Sunrise and Golden Drop, the former being one of the best of the yellow fruiting varieties and with larger berries than the last, which is suitable for dessert purposes.

Messrs. LAXTON BROS. again showed their Veitch Berry, several new Apples and a new Plum named Black Prince, a cross between Grand Duke and Greengage. The best of the Apples were Duchess of Bedford, Rufus, The Premier, and Laxton's Leader.

Messrs. STUART LOW AND CO. exhibited a collection of pot Fig trees but the fruits were not nearly ripe; the trees were nice specimens, and bore very heavy crops.

The Silver-gilt Bunyard Medal was awarded to Mr. G. T. MILLER (gr. to E. Martin Smith, Esq.), Codicote Lodge, Welwyn, for excellent Nectarines of the varieties Lord Napier, Elruge, Pitmaston Orange, Pineapple, Violette Hative, Rivers' Orange and Early Rivers. The excellent quality of these Nectarines was the subject of much comment.

Trial of Raspberries.

The following awards have been made to Summer Fruiting Raspberries by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

Reliance, and *Matchless*, both sent by Mr. A. J. MORGAN, St. Martin, Cornwall; *Reward*, sent by Messrs. LAXTON BROS., Bedford; *Paradiseberry*, sent by Mr. T. BRYNE, Stravanger, Norway.

HIGHLY COMMENDED.

Invincible, sent by Messrs. Storrie and Storrie, Glencarse; *Prolific*, sent by Messrs. Laxton Bros.; *Winkler's Seedling*, sent by Mr. T. Rietsma, Breda, Holland.

COMMENDED.

Epicure, sent by Messrs. T. H. Harraway and Son, Warminster; *Red Antwerp*, sent by Mr. C. Miller, Blairgowrie; *Rival*, sent by Messrs. Laxton Bros.

SCOTTISH PANSY AND VIOLA.

MAJOR R. S. MILNE, Bridge of Weir, presided at the second conference of the present season, held at Glasgow, on Saturday, the 25th ult., when certificates of merit were awarded as follow:—Fancy Pansies—Mrs. Isaac Whiteford, shown by Mr. A. COCHRANE, Fauldhouse, and Adam A. White, shown by Mr. JOHN DOUGLAS, Uphall. Violas—Helen W. Cochrane, May Wyper, and Mary Raeburn, all shown by Mr. A. COCHRANE.

ROYAL LANCASHIRE SHOW.

THE Royal Lancashire Show was held at Lancaster on July 30th and 31st, and August 1st and 3rd, and maintained the high position it has enjoyed for many years. The horticultural exhibits were staged in one large tent, and competition was keen for the liberal prizes offered. The arrangements were all that could be desired.

In Class 1 for a group of miscellaneous plants, for which £40 was offered as the first prize, Messrs. J. CYPHER AND SONS won the premier award. This exhibit evoked a good deal of well deserved admiration for the tasteful manner in which it was arranged. It included many well-grown foliage plants, particularly Codiaeums, graceful Humeas and Dracaenas, while Anthuriums, Fuchsia triphylla, Odontoglossums, Cattleyas, and Lilioms were the principal flowering plants employed. The second prize of £35 was won by Mr. W. A. HOLMES, Chesterfield. Mr. T. M. PETCH, Bradford, was third.

For a collection of hardy perennials arranged on a space thirty feet by ten feet, three excellent exhibits were staged. Messrs. BEES, LTD., Liverpool, won the first prize of £30 with a superb group of brilliant colouring; Messrs. HARKNESS AND SONS and Messrs. G. GIBSON AND CO., Bedale, were placed second and third respectively, with exhibits not quite so carefully arranged, but nevertheless of very fine quality.

For a collection of Roses occupying a space fifteen feet by five feet, Messrs. BEES, LTD., won the first prize of £20 with a well-arranged exhibit of popular varieties. Mr. THOS. ROBINSON, Nottingham, was a close second, and he also had a very fine exhibit.

The Sweet Pea classes were all keenly contested. Messrs. ROBERT BOLTON AND SONS, won the first prize of £15 offered for a collection arranged to produce the best effect in a space twenty feet by five feet; Messrs. HERD BROS., Penrith, were second, and Messrs. WADSWORTH BROS., Bishop Wilton, third.

For twelve bunches of twelve Sweet Peas, distinct, Mr. A. WESTON, Keighley, was placed first, Mr. STEPHEN SHACKELTON second, and Mr. JOHN PILKINGTON, third.

For six bunches, distinct, Mr. T. N. CROSS, Lancaster, excelled, Mr. W. A. WESTON being placed second, and Mr. JOHN PILKINGTON, third.

Vegetables were well shown in Messrs. SUTTON AND SONS', Messrs. DICKSON AND ROBINSON'S and Messrs. CLIBRAN'S classes. Mr. W. ROBINSON, Garstang, carried off the first prize in each class with some very fine produce, but the omission of Potatos in each of his exhibits detracted considerably from their value. Mr. T. HUNTINGDON, ALLAN FAULKNER and F. WAGHORNE were the other prize winners.

Trade exhibits were an outstanding feature of the show, especially Messrs. ALEX. DICKSON AND SONS' Roses, Messrs. SUTTON AND SONS' group of annuals, etc., Messrs. ALLWOOD BROS.' Carnations and Dianthus Allwoodii, Messrs. DOBBIE AND CO.'s Dahlias, Roses, and Sweet Peas, and Messrs. BLACKMORE AND LANGDON'S Begonias, all of which received Large Gold Medals.

Messrs. ALEX. DICKSON AND SONS' exhibit of Roses was deservedly awarded The Royal Botanical and Horticultural Society of Manchester's Special Prize offered for the best exhibit in the show.

Gold Medals were awarded to Messrs. HAYES AND SONS, Ambleside, for a rock garden; to ROBERT BOLTON AND SONS for Sweet Peas, to Messrs. ALEX. DICKSON AND SONS for Sweet Peas, to Messrs. JOHN FORBES AND SONS for Phloxes, Violas and border Carnations, to Messrs. TOOGOOD AND SONS for Gladioli, and to Messrs. ISAAC HOUSE AND SON for Scabious and Gaillardias.

Silver Medals were awarded to Mr. SEPTIMUS PYE for Phloxes and border Carnations, to Messrs. W. COCKING AND SONS for hardy shrubs, to Messrs. BAKERS for herbaceous flowers, and to Messrs. JONES for Scabious and Violas.

FEDERATION NATIONALE DES SYNDICAT
HORTICOLES DE FRANCE.

THE seventeenth Annual Congress of the National Federation of French Horticultural Syndicates was held this year at St. Brieuc, a little town in north Brittany, from the 6th to the 8th July.

Among the questions discussed was that of fixing the minimum prices for produce; and a series of prices for trees and shrubs was agreed upon by the commercial committees for Angers, Orleans, and Ussy, for the year 1925-26. A further conference is to be held in January next at which delegates from the different districts affected will meet, under the auspices of the Federation, and discuss minimum prices for plants.

Another important decision was the establishment of a society for insurance against damage by hail. A committee which had the matter in hand gave a favourable report of the prospects, and the minimum subscription fixed by the law of 1922—50,000 francs—towards the proposed capital of Fr. 6,700,000 having been obtained, the Society is to be formed so soon as the necessary preliminaries have been arranged.

The annual subscription to the industrial section of the Federation was considerably increased by the Congress, but by way of recompense it has been decided that the names of the members of the section shall be printed in the report of the Congress, with three lines of advertisement after them if desired.

The social side of the Congress was not forgotten, and a banquet at which the guests numbered one hundred and seventy-five, was presided over by M. Guillon, Inspector General of Agriculture. At the termination of this function, there was a presentation to M. Turbat, on the occasion of his nomination to the order of the Legion of Honor.

ANSWERS TO CORRESPONDENTS.

EARLY-FLOWERING OUT-DOOR CHRYSANTHEMUMS: S. A. D. The following list of hardy, early-flowering out-door Chrysanthemums may be suitable for your purpose: Almirante, orange-bronze; Betty Spark, rosy-pink; Bronze Betty Spark, Bronze Goacher, Cranford Yellow, Crimson Marie Masse, Dick Barnes, Burgundy-crimson; Dolores, bronzy terra-cotta; Framfield Early White, Goacher's Crimson, Golden Goacher, Goldfinder, yellow; Harvester, bronze; Horace Martin, golden-yellow; J. Bannister, lemon-yellow; Le Pactole, bronzy-yellow; Lichfield Pink; Mme. Marie Masse, lilac-mauve; Mrs. Marshall Field, pink; Perle Chatillonnaise, creamy-white; Polly, deep orange; Red Almirante; Sanctity, white; September Glory, orange-bronze, and September White.

POTATOS FROM SEEDS: E. M. M. It is quite an easy matter to raise Potatos from seeds provided the fruits are allowed to remain until the seeds are fully ripe. They may be raised in much the same way as are Tomatos, hardened off in frames and then planted out. You will not, however, get such a good crop from seedlings as from good seed sets.

GENTIANA SEPTEMFIDA DISEASED: W. A. There were fungi present on the specimens received, but we believe these to be of secondary consideration. The initial injury was probably due to a different cause, possibly an insect attack.

NAMES OF PLANTS: K. F. and W. F. Silene Armeria (Sweetwilliam Catchfly).—John G. Calamintha grandiflora, a native of Continental Europe and long grown in herbaceous borders. It is not a wild British plant, but an escape from gardens.

NAMES OF FRUITS: J. T. W. 1, Ribston Pippin; 2, Lane's Prince Albert; 3, Birmingham Pippin.

PAEONIES FAILING TO FLOWER: H. Paeonies resent disturbance at the roots and after replanting generally fail to flower freely for two seasons; this is particularly noticeable if they are old clumps. It is not stated whether the clumps were divided or replanted as lifted; when old plants are divided they generally grow with great vigour. A good mulching of cow dung, if given now, would help to strengthen the crowns and ensure a crop of flowers next season.

PEA HAULM DISEASED: H. L. No obvious signs of fungous disease could be detected upon the discoloured Pea haulm. We believe the cause of the trouble is to be found in the continued dry weather during the growth of the Peas and also attacks by insects, such as thrips, aggravated by the dry atmospheric conditions.

PEACH FRUITS FAILING: J. R. Troubles due to the failure of the stone and kernel of Peach fruits are generally traceable to a lack of lime in the soil.

RASPBERRY SEEDLING: D. S. F. The seedling Raspberry is a strong growing variety and fruits freely along a great length of stem. The rounded fruits are of good size, pleasant to the taste and refreshing. These good qualities, together with the fact that it flowers later than most varieties should make it useful. Before distributing it, however, you should subject it to a thorough test by the side of standard varieties.

RUNNER BEANS FAILING TO SET: W. S. Runner Beans frequently fail to set their early flowers and this is generally considered to be due to dry atmospheric conditions, whereas cool and comparatively moist conditions appear to favour the setting of the flowers. This has been recognised by many generations of gardeners and they counteract dry weather conditions by syringing the plants freely each evening after a warm, dry day.

STRIPE DISEASE IN TOMATOS: C. G. The Tomato fruits and leaves afford ample evidence that your plants are suffering from Stripe disease, caused by an organism named Bacillus Lathyr. This disease reaches the most serious proportions when growth is rapid and of a sappy nature. Any cultural means of hardening the growth will help to check the disease. Perhaps the best method in practice consists of applying five-hundredweights of sulphate of potash to the acre. This should have the effect of checking the disease, but in very rich soils it may be necessary to repeat the dressing some three weeks later. The organism causing Stripe disease is carried on the hands and pruning knives of workers, therefore they should be instructed to leave all infected plants until the last, and on no account to go from a diseased plant to a healthy one without first washing their hands and wiping the knife on a rag dipped in some disinfectant.

VIOLAS GOING OFF: J. and R. B. Violas often fail in the same way as your specimens and it is generally due to a soil-inhabiting fungus invading the underground portion of the stem. The heavy soil and clay subsoil would aggravate the trouble. It would be best to plant on fresh ground, or, if that is impossible, to trench the border and incorporate some material that will make the texture of the soil looser. Dressing the border with sulphate of potash is sometimes useful in warding off fungous attacks.

Communications Received.—J. H. G.—H. C.—H. O'H. M.—Miss H.—A. D.—W. S.—W. A. (Thanks for 2s. 6d. for R.G.O.F. Box)—H. C. R.—C. R.—M. N.—Peach Grower.—G. P. B.—J. S.—J. K. E.

MARKETS.

COVENT GARDEN, Tuesday, August 11th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in the day.—E.D.S.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum	10 0-13 0	Hydrangea	18 0 24 0
cuneatum	10 0-12 0	—pink, 48's per	18 0 24 0
—elegans	10 0-12 0	doz.	18 0 24 0
Aralia Sieboldii	9 0-10 0	—blue, 48's per	30 0-48 0
Araucarias, per	30 0-42 0	doz.	30 0-48 0
doz.	30 0-42 0	Marguerites, white,	15 0-18 0
Asparagus plu-	12 0-18 0	48's per doz.	15 0-18 0
mosus	12 0-18 0	Nephrolepis in	12 0-18 0
—Sprengeri	12 0-18 0	variety	12 0-18 0
Aspidistra, green	30 0-60 0	—32's	24 0-36 0
Asplenium, per	12 0-18 0	Palms, Kentia	30 0-48 0
doz.	12 0-18 0	—60's	15 0-18 0
—32's	24 0-30 0	Pteris, in variety	10 0-15 0
—nidus	12 0-15 0	—large 60's	5 0-6 0
Cacti, per tray,	5 0-7 0	—small	4 0-5 0
—12's, 15's	5 0-7 0	—72's per tray	2 6-3 0
Crotons, per doz.	30 0-45 0	of 15's	2 6-3 0
Cyrtomium	10 0-25 0	Viscarias, 48's	15 0-18 0
Hydrangea	18 0-30 0	per doz.	15 0-18 0
White, 48's per	18 0-30 0		
doz.	18 0-30 0		

Cut Flowers, etc.; Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Achillea, per doz.	5 0-6 0	Heather, white,	12 0
bun.	5 0-6 0	per doz. bun.	12 0
Adiantum deco-	9 0-10 0	—pink, per doz.	8 0-9 0
rum, doz. bun.	9 0-10 0	bun.	8 0-9 0
—cuneatum, per	6 0-8 0	Lapagerias, per	3 6-4 0
doz. bun.	6 0-8 0	doz. blooms	3 6-4 0
Asparagus plu-	2 0-3 0	Lilium longiflorum	2 6-3 0
mosus, per bun.	2 0-3 0	—speciosum	2 6-3 0
long trails, 6's	1 6-2 6	album, long, per	2 6-3 6
med. sprays	0 9-1 3	doz.	2 6-3 6
—Sprengeri, per	1 6-2 6	—short, per doz.	2 6-3 6
bun.	1 6-2 6	—speciosum	2 6-3 6
long sprays	1 6-2 6	rubrum, long,	2 6-3 0
med.	1 0-1 6	per doz. blooms	2 6-3 0
—short	0 4-1 0	—short	1 6-2 0
Asters, white, per	4 0-8 0	Lily-of-the-Valley,	24 0-30 0
doz. bun.	4 0-8 0	per doz. bun.	24 0-30 0
Carnations, per	1 6-3 0	Montbretia, per	4 0-6 0
doz. blooms	1 6-3 0	doz. bun.	4 0-6 0
Chrysanthemum	3 0-4 0	Orchids, per doz.	36 0-48 0
maximum, doz.	3 0-4 0	—Cattleyas	36 0-48 0
bun.	3 0-4 0	—Cypripediums	5 0-7 0
Chrysanthemums	4 0-8 0	Roses, per doz.	1 6-2 6
—white, per doz.	4 0-8 0	blooms, Rich-	1 6-2 6
—bronze, per doz.	2 0-3 0	mond	1 6-2 6
blooms	2 0-3 0	—Liberty	1 6-2 6
—bronze, per doz.	10 0-12 0	—Madame Butter-	1 6-2 6
bun.	10 0-12 0	fly	1 6-2 6
—yellow, per doz.	6 0-8 0	—Mme. A. B. E.	1 6-2 6
blooms	6 0-8 0	Chatenay	1 6-2 6
—yellow, per doz.	12 0-15 0	Melody	1 6-2 0
bun.	12 0-15 0	Molly Sharman	2 0-2 6
Coreopsis, per doz.	1 3-1 6	Crawford	2 0-2 6
bun.	1 3-1 6	—Ophelia	2 0-2 6
Corndollars, per	2 0-2 6	—Sunburst	2 0-3 0
doz. bun.	2 0-2 6	Scabiosa caucas-	4 0-5 0
Croton leaves	0 9-2 6	ica, per doz.	4 0-5 0
per doz.	0 9-2 6	bun.	4 0-5 0
Delphiniums, var-	3 0-4 0	Smilax, per doz.	3 0-3 6
ious, per doz.	3 0-4 0	trails	3 0-3 6
spikes	3 0-4 0	Statice, mauve	5 0-6 0
Fern, French, per	0 0-1 0	—yellow, per doz.	5 0-6 0
doz. bun.	0 0-1 0	bun.	5 0-6 0
Gaillardia, per	3 6-4 0	—white, per doz.	5 0-6 0
doz. bun.	3 6-4 0	bun.	5 0-6 0
Gardenias, per	6 0-12 0	—pink, per doz.	5 0-6 0
box, 12's, 18's	6 0-12 0	bun.	5 0-6 0
Gladioli, white,	12 0-15 0	—latifolia, per	10 0-12 0
per doz. bun.	12 0-15 0	doz. bun.	10 0-12 0
—primulinus, per	2 6-3 0	—incana, per doz.	9 0-12 0
doz. spikes	2 6-3 0	bun.	9 0-12 0
—Halley, per doz.	1 6-2 0	Stephanotis, per	2 6-3 0
spikes	1 6-2 0	72 pips	2 6-3 0
—Prince of Wales	2 0-3 0	Stock, English	6 0-8 0
per doz. spikes	2 0-3 0	white	6 0-8 0
—scarlet, per doz.	2 0-3 0	Sultan, white, per	4 0-6 0
spikes	2 0-3 0	doz. bun.	4 0-6 0
—cream, per doz.	3 0-4 0	—mauve, per doz.	4 0-6 0
spikes	3 0-4 0	bun.	4 0-6 0
—Giant White,	2 0-3 0	—yellow, per doz.	5 0-6 0
per doz. spikes	2 0-3 0	bun.	5 0-6 0
Gypsophila panic-	0 0-15 0	Sweet Peas, per	4 0-9 0
ulata, double,	0 0-15 0	doz. bun.	4 0-9 0
per doz. bun.	0 0-15 0	Violas, per doz. bun.	1 0-1 6

REMARKS.—White and coloured Asters are receiving more attention from buyers; single varieties are plentiful and gradually improving in quality. Gladioli are also very prominent at the present time owing to the excellent quality of the spikes and a fine selection of varieties is on sale at a moderate price; white and

scarlet are possibly the most favoured colours. Supplies of Chrysanthemums are slowly increasing, spray bronze being most plentiful. Small consignments of Horace Martin and Roi de Blanc were on sale to-day, also a few disbudbed blooms of yellow Mercedes. Sanctity (white) is expected in larger quantities next week. Prices for Carnations and Roses are somewhat firmer. Supplies of all Liliums have been sufficient for requirements. Blooms of L. longiflorum are in fine condition, and their prices lower than for some time past. Amongst the out-door blooms there is little change to note from last week; supplies are generally shorter and prices firmer for sound stuff, but there is little demand.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English—		Lemons, Messina,	9 0-12 0
—Early Victoria,	2 6-6 0	per box	9 0-12 0
bushel	2 6-6 0	—Murcia	12 0-20 0
—Grenadier	3 0-8 0	—Naples	15 0-30 0
—Gladstone	2 0-2 6	Melons (Forced)	6 0-10 0
—Beauty of Bath	2 0-8 0	basket	6 0-10 0
—bushel	2 0-8 0	—Cantaloupes	3 0-8 0
Australasian—		case	12 0-14 0
—Granny Smith	25 0-30 0	Nectarines, per	6 0-18 0
—Sturmers	8 0-18 0	doz.	6 0-18 0
Bananas	14 0-22 6	Oranges, Jaffa	16 0-18 0
—English per lb.	1 0-1 3	—Spanish—per case	25 0-35 0
—Red, 1-sieve	5 0-8 0	—300's	25 0-35 0
Gages, Spanish	8 0-15 0	—300's	25 0-35 0
1-sieve	8 0-15 0	—504's	20 0-30 0
Gooseberries,		—South African,	20 0 25 0
cooking berries	2 0-3 6	per case	20 0 25 0
per 1-sieve	2 0-3 6	Peaches, English	6 0-24 0
Grapes—		per doz.	6 0-24 0
—Alicante, per lb.	1 6-2 6	Pears, Williams',	4 0-7 0
—Belgian	1 0-2 0	hon. Chretien,	4 0-7 0
—English	2 0-3 0	—crates	10 0-16 0
—Colmar	2 0-3 0	Pines	5 0-8 0
—Hamburgh, lb.	1 6-3 0	—South African,	6 0-7 0
—Muscat	2 6-6 0	box	6 0-7 0
—Canon Hall	3 0-7 0	Plums, English	8 6-10 0
Grape Fruit,		—Czars	8 6-10 0
—Florida, finest	55 0-60 0	—French, crate	6 0-8 0
—South African,	32 6-35 0	—Early Rivers	8 0-10 0
per case	32 6-35 0	—Orleans	9 0-10 0
		—French Royals	10 0-11 0
		—Common	6 0-8 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—		Marrows, tally	5 0-7 6
—Evesham, flat	6 0-8 0	Onions—	
—Scarlet Runner,	10 0-12 0	—English, per cwt.	12 6-14 0
bushel	10 0-12 0	—Valencia	11 0-11 6
Beets, new, per	3 0-4 0	—Dutch	11 0-12 0
doz. bun.	3 0-4 0	Parasips, per cwt.	4 0-6 0
Cabbage, per tally	7 6-12 6	Pears, Yorkshire,	16 0-18 0
Cauliflowers, per	2 0-4 0	per bag	16 0-18 0
doz.	2 0-4 0	Potatoes—	
Carrots, new, per	6 0-7 0	—English, per	6 0-8 0
bag	6 0-7 0	cwt.	6 0-8 0
Cucumbers, per doz.	4 6-5 6	Tomatoes, English,	7 0-7 6
—Flats, 36's, 42's	14 0-18 0	per strike—	
Dutch Onions	11 0-12 0	—pink	7 0-7 6
Endive, per doz.	2 6-3 0	—pink & white	7 0-7 6
Greens, best, per	1 6-2 6	—white	4 6-6 0
bag	1 6-2 6	—blue	4 6-6 0
Horseradish, per	2 0-2 6	—Guernsey	6 0-7 0
bundle	2 0-2 6	—Dutch	4 0-6 0
Lettuce, Cos, doz.	1 0-3 0	Turnips, new, per	5 0-7 6
—Cabbage Let-	1 6-2 6	doz. bun.	5 0-7 6
tuce	1 6-2 6		
Mushrooms, cups	2 6-3 6		
—Broilers	1 3-2 0		

REMARKS.—The London trade has depreciated to a considerable extent, as is usual during August. A fair provincial demand, has, however, kept things moving. English Apples have been marketed in large quantities, but, unfortunately, there is a very large proportion of second grade fruit for which there is no demand. Well-coloured fruits of Beauty of Bath Apple are selling well, but Gladstone is an unpopular sort with the public. Large cookers are wanted, and those marketed are maintaining good prices. Plums are a fairly good trade; the varieties Czar, Orleans and Early Rivers are selling well. A few Gooseberries are still arriving, but generally they are out of condition. Hothouse Grapes remain a steady trade, and Peaches, Nectarines, and Melons show little variation in quotation. Oranges from South Africa and Australia and also Grape Fruits are in good demand. Greenhouses from Spain and France are a slightly better business, with improved prices. Mushrooms are a quiet business, but supplies are small and prices are being maintained. Green vegetables are fairly plentiful. Salads continue in demand, consignments going out readily. The Potato trade is quiet with ample supplies available.

GLASGOW.

The low prices prevailing in the cut flower market has stimulated buying, and the increased demand experienced during the past week has imparted a firmer tone which is reflected here and there in a slightly improved return to growers. Carnations, for instance, which previously ranged from 9d. to 1/6 were worth from 1/1- to 2/-, and Sweet Peas, ranging from 2d. to 6d. per bunch were also dearer. Marguerites, too, sold more readily, although their values hardened somewhat at 2d. to 4d. per bunch. Blooms of bronze Chrysanthemums made 2/- per doz., Lilium longiflorum (Harrissii) realised 4/- per bunch

and lancifolium rubrum 3/- per bunch. Gladioli were cheap and plentiful and Roses gave a poor return, the former sold at 5d. per bunch and 6d. to 1/- for 6's, while single spikes varied from 1d. to 3d. each. Richmond Roses realised from 9d. to 1/3 per dozen. Mme. Abel Chatenay from 1/- to 2/-, and Mrs. Herbert Stevens, 10d. to 1/-, but the blooms were small and of medium quality. Small bunches of Asters could be bought at 1/4d. and 2d. each, and the large at 3d. to 4d. Gypsophila, single, fetched 3d. to 4d., and G. paniculata, 6d. to 9d.; and other prices were Candytuft, 1d.; Morning Star, 2/- per dozen; Achillea, 4/-; Statice, 2d. to 9d.; Smilax, 1/6 to 2/-, and Asparagus Fern, 6d. to 2/3.

Trade in the fruit market continued active notwithstanding a fairly general advance in prices. Black Currants in particular, were very dear on Friday when buyers conceded 1/6 per lb. for ordinary qualities, and the upward tendency of prices was also reflected in Red Currants which were worth from 6d. to 7/4d., Raspberries from 1/2 to 1/4; Gooseberries, from 2/4d. to 5d.; Gages, from 16/- to 23/-; Czar Plums, 6d. to 7d.; Early Rivers, 5d. to 6d.; and Egg Plums, 2d. to 3d. Strawberries are now almost done for another season, and small berries returned from 6d. to 9d. per pound. English Apples are in plentiful supply at 2d. to 3d. per pound. A further recovery was made in the price of Tomatoes, Scotch fruit commanding 8d. to 9d. per pound, English, 7d. to 8d., Guernsey, 5d. to 6d., and Dutch 4d. to 5d. Scotch Hambro Grapes made 1/9 to 2/3 per pound, and Dutch Alicante, 1/4 to 1/6, while Peaches were worth from 8/- to 12/- per dozen. The prices for Apples, Pears and Oranges were unchanged.

THE WEATHER.

JULY was a warm, calm month, with large daily and monthly ranges of temperature. Easterly winds were more prevalent than usual. The rest of the meteorological elements did not differ much from their normal values. The mean temperature was 62°, or 2½° above the average. Rain fell on fifteen days—an excess of one day; but the total amount was scarcely 2½ inches in Hesketh Park, or half-an-inch below the average. At Birkdale, slightly less fell, but near Woodvale, Ainsdale, three inches were measured. An unusually large proportion of the month's rainfall occurred in the night, many of the daytime hours yielding hardly any. There were only one hundred-and-ninety-three hours of bright sunshine, implying a small deficiency of twelve hours. Wind movement was forty miles per day below the average. The afternoons were much brighter than the mornings. Evaporation was substantial though not nearly so excessive as in June. Visibility was generally very good. Thunderstorms formed almost the only occasional phenomena. They occurred on five days in the latter part of the month, but all were of moderate intensity. A house, however, was struck in Tinsdale on the 22nd, and hail fell in some wards of the Borough on the 27th. Late in the afternoon on the 22nd, the maximum thermometer rose to 86.7°. Joseph Bazendell, Borough Meteorologist, The Fernley Observatory, Southport.

THE WEATHER IN SCOTLAND.

Sunshine totalled 168.3 hours, being a daily average of 5.43 hours or about 32%, which is just normal for July in this district. The brightest day was the 27th which contributed 14½ hours. There was only one day, viz., the 3rd, on which a blank card was returned. The rainfall, following a dry spell, was considerably under the average, being only 41.15 millimetres (1.62 inch) which, however, was distributed over 15 days, 11 being 1 millimetre and 4 under. The wettest day was the 25th which yielded .32 of an inch. The temperature throughout the month was relatively high; the mean maximum being 68.6°, and the mean minimum 52.1° giving a mean average of 60.3°, and an absolute range of 35°. The highest screen temperature of 81° was recorded on the 11th while 80° was reached on the 12th and 23rd. The highest and lowest minima of 58° and 46° occurred on the 23rd and 27th respectively. On the grass the lowest point reached was 39° on the 16th. At one foot deep the soil temperature fluctuated between 60° and 63°, the latter figure being reached on the 24th, 25th and 26th falling 1° afterwards. Atmospheric pressure was fairly steady; varying from 1025.3 mbs. on the 13th to 1028.2 mbs. on the 27th. The mean for the month being 1013.45 mbs. Winds, which were mainly south and south-west, were never of great force. Fogs were experienced on the 14th and on the evening of the 25th. Thunder was heard on several occasions but at some distance away.—John Davidson, Meteorological Station, The Training College Gardens, Mayfield, Dundee.

CATALOGUES RECEIVED.

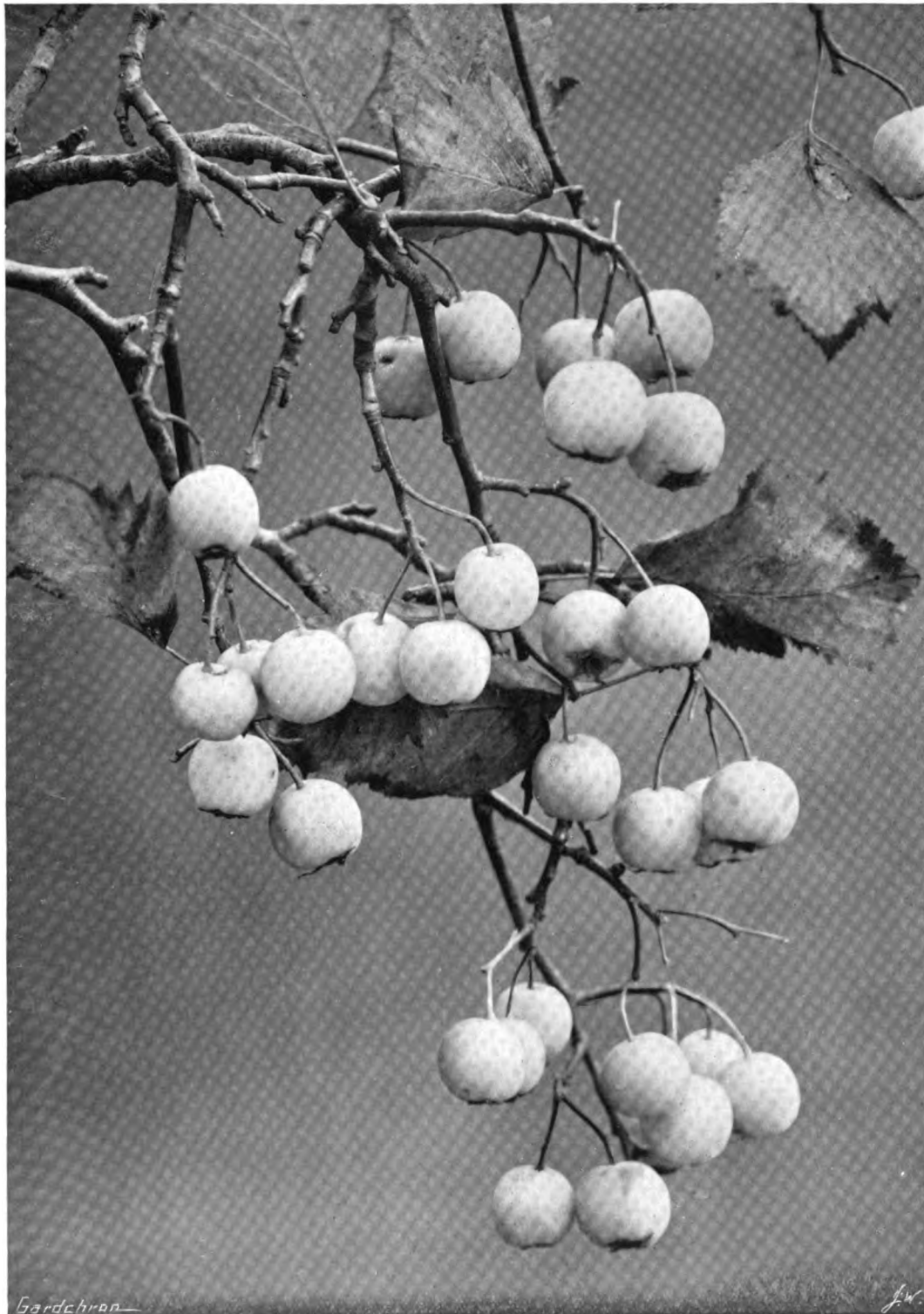
BULBS, ETC.

DICKSONS SEEDS, LTD., Chester.
LITTLE AND BALLANTYNE, LTD., Carlisle.
W. CUTBUSH AND SON, LTD., Barnet, Herts.
BROWN AND WILSON, 10, Market Place, Manchester.
CHAPLIN BROS., LTD., Paul's Royal Nurseries, Waltham Cross, Herts.
E. WEBB AND SONS, LTD., Worsley, Stourbridge.
LEIGHTON'S, 30, Renfield Street, Glasgow.
CHAPLIN BROS., LTD., Paul's Royal Nurseries, Waltham Cross, - Roses, Fruit Trees, etc.

GARDENING APPOINTMENT.

Mr. W. Wyatt, for the past 4½ years Gardener at Chilton House, near Thame, as Gardener to W. N. BILBROUGH, Esq., Adderbury Grange, near Banbury.

Supplement to 'The GARDENERS' CHRONICLE.



CRATAEGUS PRUNIFOLIA VAR. SPLENDENS.

THE Gardeners' Chronicle

No. 2017.—SATURDAY, AUGUST 22, 1925.

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SUPPLEMENTARY PLATE.

Crataegus prunifolia var. splendens.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 60.5.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 19, 10 a.m. Bar. 30.0, temp. 60°. Weather, Overcast.

It is not easy to overstate the value of the investigations into self-sterility of **Plums and Cherries** carried out by Mr. Crane at the John Innes Horticultural Institute. The most recent account of the results obtained by Mr. Crane* confirms and extends those already published. All the varieties of sweet Cherries so far investigated appear to be either wholly or partially self-sterile and the only self-fertile Cherries are all of the sour kinds, as shown in the following list: self-sterile: Amber Heart (Kentish Bigarreau), Bedford Prolific, Belle d'Orleans, Belle de St. Tronc, Bigarreau Frogmore, Bigarreau Jaboulay, Bigarreau Late Black, Bigarreau Noir de Guben, Bigarreau Noir de Schmidt, Bigarreau Napoleon, Black Eagle, Black Heart, Black Tartarian "A," Black Tartarian "B," Black Tartarian "E," Bohemian Black, Early Rivers, Elton, Emperor Francis, Florence, Géante d'Hedelfingen, Governor Wood, Guigne d'Annonay, Guigne de Winkler, Knight's Early Black, Monstreuse de Mezel, Noble, Turkey Heart, Waterloo, White Heart, Kentish Red, and Toussaint (?); partially self-fertile: Arch Duke, May Duke, Royal Duke and Empress Eugénie; self-fertile: Flemish Red, Kentish Red "A," Late Duke, Morello and Wye

Morello. Even the sour Cherries are not all absolved from self-sterility—Kentish Red and Toussaint having proved like the sweet kinds to be self-sterile. Plums show a wider range with respect to powers of setting fruit with their own pollen, i.e., self-sterile: Allgrove's Superb, Bryanstone Gage, Coe's Golden Drop, Coe's Violet, Comte d'Altham, Crimson Drop, Early Green Gage, Jefferson, Kirke's Blue, Late Orange, Late Orleans (Frogmore Orleans), McLaughlin's Gage, Old Green Gage, Pond's Seedling, President, Prune d'Agen, Transparent Gage, Wyedale, Yellow Magnum Bonum; partially self-fertile: Belgian Purple, Blue Rock, Cambridge Gage, Cox's Emperor, Early Favourite, Early Orleans, Rivers' Early Prolific, Prince Engelbert, Reine Claude Violet, Frogmore Damson; self-fertile: Belle de Louvain, Czar, Denniston's Superb, Early Transparent, Early Mirabelle, Gisborne's Golden Transparent, Goliath, Guthrie's Late, Monarch, Myrobalan Red, Oullin's Golden Gage, Pershore, Prince of Wales, Prune Géante, Reine Claude Bavay, Victoria, White Magnum Bonum, Farleigh Damson, King of the Damsons. As shown in this list—which like the previous one is reproduced from Mr. Crane's paper—of the forty-nine varieties of Plums investigated, nineteen have proved to be self-sterile, ten partly so and twenty self-fertile. The practical application of these facts is abundantly evident. When from any cause visiting insects are scarce or individual trees of self-sterile kinds are grown in isolation, steps should be taken to pollinate the flowers artificially. The work, except where the trees are large, is easy and is bound to prove remunerative. Even more interesting than the prevalence of self-sterility in Cherries and Plums is the fact that the sterility is not confined to individual varieties, but appears to run, as it were, in families or groups. For Mr. Crane has found that it is possible to arrange Cherries in groups, the members of each of which are not only sterile to their own pollen, but also to that of each other members of the group. So far three groups of sweet Cherries have been made out, the member of each of which exhibit the remarkable phenomenon of cross incompatibility. The largest of the three groups includes Early Rivers, Bedford Prolific, Knight's Early Black, Black Tartarian (two varieties) and Black Eagle. Pollen of any one of these kinds is powerless to effect the fertilization of any of the others, wherefore a group consisting entirely of these varieties would fail to set fruit whether bees were present or not. A second group of cross incompatibles include Bigarreau de Scheicken, Bigarreau Frogmore and Guigne de Winkler, and in a third group are Emperor Francis and Bigarreau Napoleon. How all but absolute is this cross incompatibility is shown by Mr. Crane's experiments. Of no fewer than 8,878 flowers of Cherries of Group 1 pollinated by pollen of members of the group, only three fruits were set and like results were obtained with the other groups. When, however, a member of one cross incompatible group was crossed with pollen from a variety belonging to another group, a high yield of fruit was obtained. For instance, Bedford Prolific crossed with Early Rivers, which belongs to the same group, gave no fruit but crossed with Bigarreau Frogmore, a member of another group, it proves thoroughly fertile as it does when pollinated with pollen from Bigarreau Napoleon. It remains for further investigation to determine whether all compatibles, that is, all members of extraneous groups,

are equally good pollinisers. As shown by Mr. Crane and others, the sweet Cherry, Prunus Avium and its varieties are self-sterile, but when they are pollinated with Cherries such as the Dukes and varieties of P. Cerasus, good and plentiful fruit is set. The cross, however, is not so successful when made the other way. Plums show the same proclivities to group sterility as do the sweet Cherries, and so far Mr. Crane has found four groups, the members of any one of which refuse to cross with one another. The first group include the Drops—Coe's Golden Drop with its sports, Coe's Violet and Crimson Drop and also Jefferson and its sport of recent origin, Allgrove's Superb. Another group includes President, Late Orange and Cambridge Gage, but in this case Cambridge Gage is neither absolutely self-sterile nor entirely infertile with pollen of other members of the group. Yet another cross and incompatible group includes River's Early Prolific and Blue Rock, which latter, however, like Cambridge Gage, is only partly incompatible. With respect to self-fertile Plums, it is to be remarked that some, at all events, set better crops when cross-pollinated than when supplied only with their own pollen. As to the physiology of self-sterility, a fuller discussion must be reserved for a subsequent occasion, but this much may now be said, that sterility results, as Mr. Crane's microscopic examination shows, from a check to the growth of the pollen tube in its passage down the style. The pollen grain germinates on its own stigma, begins to grow, but before it reaches the ovary the pollen tube is arrested. Hence the male reproductive cells which the pollen tube carries never reaches the ovule and so fertilisation does not take place.

Scotch Fruit and Potato Crops.—The Board of Agriculture for Scotland report that the yield of Strawberries during the past season proved to be a fair average, except in Lanark, where the crop was lighter than usual owing to the drought. Raspberries were a fair crop in north-east Perth, but in north-west Lanark the yield was below the normal, while in the Blairgowrie district the yield was from thirty to forty hundredweight per acre. For the first three weeks of the season one thousand six hundred and seventy-nine tons of fruit were dispatched from the latter station, compared with one thousand three hundred and forty-two tons for the whole of the 1924 season. Gooseberries and Currants were full crops of good quality in Lanark, Central Aberdeen, and north-east Forfar, but in south-east Perth and Dumfries the yield was below the average. Apples and Pears are disappointing, and the yield in most cases will be light. Plums are a failure in north-west Lanark and Dumfries, but in north-east Fife the crop is satisfactory. The condition of the Potato crops is satisfactory, and only in a few districts is the yield expected to be below the normal. No reports of disease have so far been received. In most of the northern and eastern districts the crop has made excellent progress, and the yield will probably be above the average.

Presentation to Secretaries.—At the forty-seventh annual flower show of the Malmesbury Horticultural Society, Mr. W. Tinley who has been Secretary to the Society for twenty years, was the recipient of a handsome silver salver suitably inscribed as a token of appreciation from the members of the Committee on his retirement, occasioned by Mr. Tinley leaving the district.—At the 77th annual show of the Launceston United Cottage Garden Society the Mayor (Councillor H. Hoskin), on behalf of the Society, handed to Mr. S. D. Brimmell an inscribed silver cigarette case and a case of Treasury notes, in recognition of his services as hon. secretary from 1911 to 1924.

* Self-Sterility and Cross Incompatibility in Plums and Cherries. By M. B. Crane. *Journal of Genetics*. Vol. 15, No. 3. July, 1925.

American Orchid Society's Show, 1926.—We have received the Preliminary Schedule of the American Orchid Society's Exhibition to be held in the Memorial Hall, Philadelphia, on May 7 to 9, 1926. The show promises to be one of the finest Orchid exhibitions ever held. The schedule, which enumerates ninety-three classes, is compiled to attract and provide for growers large and small, the classes being arranged to secure the exhibition of every section of Orchids by amateurs, commercial growers, and beginners of Orchid culture. The following extracts from the schedule give some indication of the important groups expected. In the Amateurs' Section, Class 1 is for a group of Orchids in flower, embracing at least fifteen genera or bi-generic hybrids, arranged for effect, with foliage plants, covering not over two hundred and fifty square feet. A similar class for commercial growers is provided, and gold medals are offered in each case. A helpful footnote runs: "In order to encourage the greater and better cultivation of tropical Orchids by amateurs who personally cultivate their own plants, and by those who have limited facilities for growing Orchids, the trustees earnestly request that each exhibitor enter the largest groups which his collection enables him to enter, thus personally contributing to the horticulture of Orchids by leaving the classes for the smaller groups to those who have limited collections." The section comprising classes for hardy native Orchids should prove very interesting. It will be remembered that Mr. A. C. Burrage, the President of the American Orchid Society, exhibited American species of Orchids at the last Chelsea show, and a portion of the exhibit showing plants of *Cypripedium pubescens* was illustrated in *The Gardeners' Chronicle*, May 23, p. 356. The Secretary is Mr. Thomas W. Nason, 85, Ames Building, Boston, U.S.A.

Presentation to a Gardener.—Mr. C. Hebbourn, gardener to Mrs. Hamilton-Fellows, at Tangle Park, and a member of the committee of the Guildford and District Gardeners' Association, has received presentations on the occasion of his recent marriage. His mistress, in whose employ he has been for the past fifteen years, presented him with a cheque running into three figures, besides other gifts, and the Guildford Gardeners' Association gave him a clock suitably inscribed. His wife's mistress, Lady Walker, Worplesdon, presented her with a cheque for fifty pounds, provided the wedding breakfast, put the three best rooms of the mansion at the bride's disposal for the reception, and sent the happy couple away in the best motor car, the bride's master giving her, as a parting gift, a gold brooch set with diamonds. The employers of the bride and bridegroom respectively seemed to vie with each other in showing kindnesses to their servants.

Introduction of New Plants into U.S.A.—The United States Department of Agriculture has published a bulletin* containing a list of seeds and plants imported by the Office of Foreign Seed and Plant Introduction, Bureau of Plant Industry, during the period from January 1 to March 31, 1923. The Inventory includes many rare plants collected by Mr. Joseph F. Rock in the western part of the province of Yunnan, China, mainly from the general region of Likiang, which lies more than eight thousand feet above sea-level, near the great mountain range around which the Yangtze River meanders on its way to the Pacific. The wild Apple of Yunnan (*Malus yunnanensis*), is described by Mr. Rock as one of the handsomest trees in this region. It grows some thirty to forty feet high and bears fruits, each an inch in diameter, in large clusters. Mr. Rock also introduced several wild Pears, one bearing mellow, edible fruits three to four inches in diameter, from an altitude of six thousand feet; a second one, which grows seventy feet tall, and another which grows sixty feet high and has fruits two-and-a-half inches in diameter. Mr. Rock also sent home a new species of *Keteleeria*, two wild Olives, and a giant Lily. Plants have also been received from many other sources, and a short description of each subject is given.

* Inventory No. 74. United States Department of Agriculture, Washington, D.C.

Acreage of Potatoes.—The acreage of Potatoes on agricultural holdings is 493,000 acres, or 41,000 acres more than in 1924 and 58,000 acres above the pre-war average. All the chief Potato-growing counties show increases, especially those in the east of the country. For two seasons Potatoes have sold at high prices and this probably explains the much increased plantings this year.

Mr. Simon Campbell.—Mr. Simon Campbell, gardener at Fyvie Castle Gardens, Aberdeenshire, is one of the best known gardeners north of the Tweed. He served his apprenticeship at Beaufort Castle Gardens, the seat of Lord Lovat, near Beaulieu, where he remained for three-and-a-half years. He left to take up an appointment at Gosford House Gardens, the seat of the Earl of Wemyss, and here he remained for four years, two years as inside journeyman and two as inside foreman. His next appointment was as general foreman in the gardens of the Duke of Athol at Blair Castle, Perthshire, where he remained for nine



MR. SIMON CAMPBELL.

years. He then decided to study forestry, the management of forest trees and estate work generally, and with this in view, he entered the service of Messrs. Dickson and Co., Edinburgh. Whilst he was with Messrs. Dickson and Co. he was offered the management of the gardens at Fyvie Castle, and after he had been there for eight years, Lord Leith of Fyvie entrusted him with the supervision not only of the gardens, but of the policies, the woods and the estate generally. His service at Fyvie Castle has extended over thirty-five years. During the time he has been at Fyvie Castle, Mr. Campbell has made extensive alterations in the gardens and pleasure grounds. He is held in the highest esteem by his employer and the community amongst which he dwells.

Permanent Summer Time.—The Summer Time Act (1925) received the Royal Assent on August 7th. The effect of this Act is to establish Summer Time permanently in Great Britain, Northern Ireland, the Channel Islands and the Isle of Man. Summer Time will henceforward commence at 2 o'clock Greenwich mean time on the morning of the day next following the third Saturday in April or, if that day is Easter day, the day next following the second Saturday in April, and will end at 2 o'clock Greenwich mean time on the morning of the day next following the first Saturday in October. Summer Time will, therefore, end this year at 2 o'clock Greenwich mean time (i.e. 3 o'clock Summer Time) in the morning of Sunday, October 4th.

Guildford Gardeners' Society's Annual Outing.—On the 13th July, one-hundred-and-sixty members of the Guildford and District Gardeners' Association, on the invitation of Mrs. Hamilton-Fellows, visited the gardens at Tangle Park, near Guildford. The day was warm and sunny, and the gardens were seen under ideal conditions. Mrs. Hamilton-Fellows provided tea for the visitors, the tables being adorned with beautiful floral decorations. The hostess welcomed her guests and extended a hearty invitation to them to come again next year in June, when the Rhododendrons would be in bloom. Warm words of praise were bestowed by her upon her garden staff, especially her gardener, Mr. C. Hebbourn. The President, Alderman W. T. Patrick, J.P., thanked Mrs. Hamilton-Fellows, whom he described as the fairy godmother of the Association, for her generous hospitality and her many previous acts of kindness, and gladly accepted the invitation on behalf of the Association to repeat the visit next June.

Rebuilding of Kelvin Hall.—The Glasgow Corporation has decided to rebuild Kelvin Hall, and has instructed the City Engineer to prepare a plan showing the accommodation to be provided. It is suggested that the whole of the Bunhouse site should be utilised for the new structure, including space provided by the demolition of tenement property. The special committee appointed to deal with the matter agreed with the Engineer's proposal that any building erected should be of a nature in keeping with the architectural features of Glasgow University, the Western Infirmary, and the Art Galleries, all of which are very near to the Kelvin Hall site.

Cambridge Botanic Garden.—Mr. C. C. Hurst has presented eighty-five specimens of rare species of the genus *Rosa* to the Cambridge Botanic Garden. Another gift, from the executors of the late Hon. C. N. Rothschild is a valuable collection of species of *Iris*. An alpine house has been presented to the Garden by Mr. J. Cherrington.

The American Apple Crop.—From an estimate of the U.S.A. Apple crop made on June 1, the yield of these fruits is expected to be ten per cent. below the average. The crop in the north-western States promises to be a little heavier than last year, but, taking the country as a whole, the crop is expected to be much lighter than in 1924, although much depends upon the rainfall during the next month or so.

Millepedes and Centipedes.—The Board of Agriculture's *Leaflet** on these members of the Myriapoda will be read with interest by gardeners, who will be glad to know that centipedes are not injurious to plants, but feed mainly on small slugs, snails and insects, and should therefore be regarded as gardeners' friends. The centipedes include the genera *Lithobius* and *Geophilus*. The former is rather large and stout, of a uniform brown colour, and is often to be found under stones and logs of wood. *Geophilus* differs from *Lithobius* in being long and slender; it is sometimes found under stones, but is more common in leaf-mould and in the surface layers of the soil. There are also several genera of millepedes, of which the two commonest are *Julus* and *Polydesmus*. The food of millepedes is almost entirely of a vegetable nature, and they will attack roots, bulbs and tubers of all kinds. The creatures may be trapped by placing portions of such vegetables as Mangolds, Beets or Turnips just under the ground. Powdered naphthalene used at the rate of one to two ounces per square yard, is also recommended, and its effects appear to be greater if the soil is watered after the application. Another useful measure is to dress the ground heavily with lime. It has been noticed that when the drills in which Peas and Beans are planted are dusted with superphosphate of lime the seeds will remain immune from attack.

* Leaflet No. 94. Ministry of Agriculture and Fisheries, 10, Whitehall Place, London, S.W.1.

Honour for Mr. James Watt.—Mr. James Watt, of Messrs. Little and Ballantyne, who has been a member of the Cumberland County Council for thirty years, expressed a wish to retire at the Aldermanic elections at the February meeting, but his colleagues on the Council took another view, and re-elected him an Alderman by the greatest number of votes, for another six years. Mr. Watt recently entertained the Council and principal officials at a garden party at his beautiful residence at Knowefield. The guests, who numbered about five hundred, were received on their arrival by Mr. and Mrs. Watt. In the evening there was another large gathering at Knowefield, and Mr. Watt was presented with a handsomely illuminated album by the Carlisle Conservatives in recognition of his services to the party. The album was bound in maroon morocco and beautifully embellished with gold lettering. The presentation was made by the Lord Advocate. Mr. Watt said he would make the album an heirloom, and perhaps it would encourage those who came after him to take a little interest in the life of the community in which they dwelt. Mr. Watt is in his eighty-fourth year.

The Melchet Court Vine.—The Black Ham-burgh Vine at Melchet Court, Romsey, Hampshire, the residence of Sir Alfred and Lady Mond, has a crop this year of five hundred bunches. The vine is supposed to be about one hundred and ninety years old, and fills a vinery one hundred and fifteen feet long, eighteen feet wide, and fifteen feet high. Mr. F. Clipstone, the gardener, informs us that the berries this year are of a fine, deep black colour, and of a luscious flavour. He further states that the roots of the vine, being in an outside border have needed a great deal of attention in watering owing to the prolonged drought in the spring and early summer.

Delay in the Transit of Fruit by Rail.—Distributors of fruit complain of delays by the railway companies in the delivery at Covent Garden and Spitalfields of consignments of fruit, even from growers whose orchards are near London. It is said, for example, that Plums picked at Maidstone on the 13th inst., brought to the railway before three o'clock in the afternoon, and due for delivery at Covent Garden before six on the following morning, did not arrive until one in the afternoon and could not be sold to the retailers until the 14th inst. By reason of the delay, the fruit had deteriorated, so that the price paid to the grower fell from 7s. to 5s. per twenty-eight pounds, and the consumers received Plums that were not so fresh as they might have been. It is further stated that, in order to avoid the risk of late deliveries, growers and distributors are frequently compelled to send fruit by passenger trains rather than by goods trains. This entails a heavy additional expense. The rates by passenger trains are from 10s. to 30s. a ton higher than the rates by goods trains, and, in addition, the railway companies insist upon a label being attached to each basket of the consignment, as identification of goods conveyed by passenger trains is more difficult than in the case of goods trains.

Acreage of Hops.—There is a slight increase in the acreage devoted to Hop production this season, the figures being 26,220 acres, as compared with 25,900 acres in 1924, and 24,890 acres in 1923. Kent is the chief Hop growing country with 15,260 acres, of which the Weald of Kent claims 7,150 acres. Herefordshire, with 4,150 acres, comes next, followed by Sussex, 2,420 acres, Worcestershire, 2,060 acres, and Hampshire, 1,040 acres, leaving 290 acres for the other counties in England and Wales.

Appointments for the Ensuing Week.—Tuesday, August 25: Royal Horticultural Society's Committees meet; Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, August 26: Southport Floral Fête (three days); Mitcham, Tooting and District Horticultural Society's meeting; Dumfries and District Horticultural Society's show (two days); Elgin Horticultural Society's

show; Dunbar Flower show. Thursday, August 27: Sandy and District Horticultural Society's show; Dundee Horticultural Society's show (three days); Ayton Flower Show; Royal Botanic Society's meeting. Friday, August 28: Dunfermline Horticultural Society's show (two days). Saturday, August 29: Auchterarder Flower Show; Bo'ness and District Flower Show; Dollar Flower Show; Falkirk Flower Show; Alexandria Flower Show; Dalry Flower Show; East Linton Flower Show; Coylton Flower Show. Tuesday, September 1: Royal English Arboricultural Society's meeting (four days); Croydon Gardeners' Mutual Improvement Society's meeting; Royal Caledonian Horticultural Society's meeting. Wednesday, September 2: Royal Agricultural Societies' Council meeting; National Viola and Pansy Society's meeting. Thursday, September 3: Dalry Flower Show; Nottingham and Notts. Chrysanthemum Society's meeting. Friday, September 4: London District Allotments and Gardens Show at the R.H.S. Hall (two days); Alloa Flower Show (two days); Cleland Flower Show. Saturday, Septem-

give amateurs a real means of judging of the respective value of the varieties. In this way, too, Pansies are re-admitted, after a long and well-deserved exclusion, on account of their worthlessness when shown in "pans." Indian Rhododendrons and their hybrids are to be shown in twelves, with the same medals as the first class of Chinese Azaleas. A class of the *newer* Chinese Azaleas in twelves, in eight-inch pots, has been formed for the convenience of beginners in the cultivation of such plants. In like manner a new class of Cape Heaths, in sixes, will enable the small grower to show his skill in managing a proverbially difficult race. In order to improve the quality of the miscellaneous collections of stove and greenhouse plants, it is determined that in no case shall any exhibitor be allowed to show more than three species or varieties of the same genus, and in the smaller of these collections one species or variety only of a genus is to be admissible. The measurement of garden pots is to be made inside, one inch below the rim. Collections of fruit are restored, with the Gold Knightian and other medals in May, the Gold

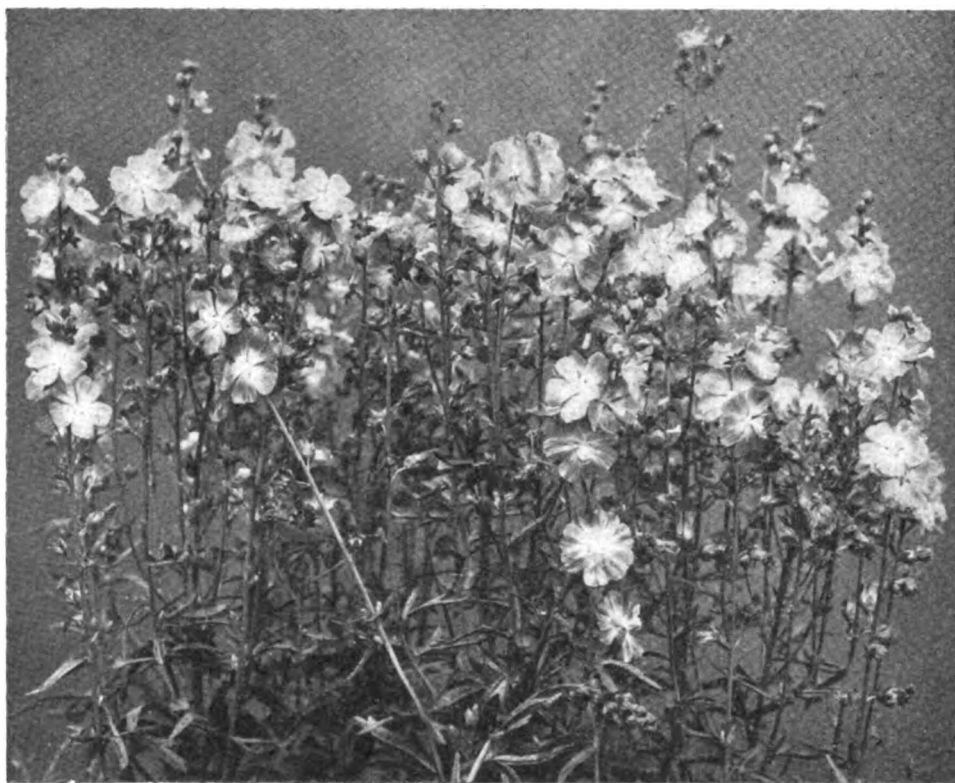


FIG. 53. SIDALCEA HIAUWATHA; FLOWERS SATINY-CRIMSON.

R.H.S. Award of Merit, August 11.

(see p. 138).

ber 5: Blackburn and District Horticultural Society's meeting and lecture; Bearsden Flower Show; Cambusland Flower Show; Cambusnethan Flower Show; Coldstream Flower Show; Crieff Flower Show; Dalkeith Flower Show.

Gardeners' Chronicle Seventy-five Years Ago.—*Horticultural Society's Exhibitions in 1851.* In another column will be found the schedule of prizes offered by the Horticultural Society at their exhibitions in 1851. The following are among the principal changes. All florists' flowers are in future to be shown in pots, and not in boxes, or pans, as cut flowers. This proposal, first made we believe in the *Gardeners' Magazine of Botany*, is wholly unobjectionable, and we cannot doubt its meeting with entire concurrence from the growers. It will put an end to the packing and trimming system, by which flowers are so changed that even their owners do not know them; and it will

Banksian and others in June, and the Silver-gilt, etc., in July; the value of the medals being in this way proportioned to the difficulty of exhibiting. These collections, are, however, to be shown with the proviso that no one who exhibits in the collections shall show elsewhere. This will secure the smaller growers against the risk of being swamped by some horticultural Leviathan. Fruiterers are, as before, absolutely excluded from exhibiting. Pelargoniums are to be shown in twelves and nines, instead of sixes. Considerable alterations in the tables and tents are in progress, so as to meet the augmented extent of exhibition which must follow the changes now decided upon. It is in particular intended that better accommodation should be provided for the large miscellaneous collections; and, upon this subject, the Vice-Secretary would be glad of suggestions in order that the convenience of exhibitors may be consulted as far as possible. *Gard. Chron.*, August 24, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

The Cool House.—The very hot weather of June and July was not conducive to the well-being of the plants in this division, but since cooler conditions have prevailed *Odontoglossums*, *Odontiodas* and other hybrids have been greatly benefited thereby. Towards the end of the present month a good many of the plants will be ready for re-potting. Where large numbers are grown it is as well to make an early start with this operation. The first to be dealt with are those with the new growths well developed, and on the point of sending out fresh roots from their bases.

Re-potting.—Re-potting is an important detail in Orchid cultivation, and much depends on when, and how it is carried out. No hard and fast rule can be laid down, as at no period of the year are all the plants ready at the same time. In re-potting it is essential that all the pots should be thoroughly clean and well-drained, to ensure a free passage of water. Over-potting must be guarded against. As a general rule the most vigorous plants should be afforded larger receptacles, and a rougher compost used than for those that are weakly. Remove all useless back pseudo-bulbs and press the soil firmly among the roots.

Treatment after Re-potting.—For a month or two after root disturbance very great care is necessary in the application of water. A surface watering with a rose can will suffice, and the plants should be placed together in the shadiest position in the house. In the case of those shifted into larger pots without much disturbance of the roots, a more liberal supply of water will be needed. *Osmunda-fibre* and A.I. fibre cut into short portions with some Sphagnum moss and a sprinkling of crushed crocks, the whole mixed well together, will form a suitable rooting medium. Other Orchids that thrive in this division needing attention at the roots are *Maxillarias*, of such species as *M. Turneri*, *M. fuscata*, *M. grandiflora*, *M. Lehmannii* and *M. Mooreana*. For such species as *M. Sanderiana*, *M. praestans*, and *M. Amesiana*, shallow teak-wood baskets are preferable to pots, as generally the flowers of these plants develop in a downward direction.

THE FLOWER GARDEN.

By W. AUTON, Gardener to Viscount ELVEDEN, Pyrford Court, Woking, Surrey.

The Woodland Garden.—The present is a suitable time to make the woodland garden tidy before the rush of autumn work comes on. Grass paths and the edges of made paths should be trimmed so that one can reach any objects of interest in comfort. Branches of trees or shrubs overhanging paths or tracks or obstructing points of view should be cut away, and where groups of herbaceous plants have been planted in various positions they should be freed from weeds and have the surface soil stirred.

Violas and Pansies.—So soon as cuttings of these useful subjects are obtainable they may be inserted in boxes of sandy compost and placed in a cold frame. Keep the frame close for a week or two removing the lights for a short time each morning to allow superfluous moisture to escape. Good stock can only be obtained from firm basal growths, and if these are not available in sufficient numbers the plants should be cut hard back to encourage growth.

The Rose Garden.—Perpetual-flowering *Roses* should be given adequate supplies of water during dry weather. If mildew is trouble-

some syringe the plants with soft water in the evenings and dust the affected parts with flowers of sulphur. Cuttings of *Tea*, *Hybrid Tea*, *Noisette*, *China*, and *Bourbon Roses* may be struck in light, sandy soil over gentle bottom heat. So soon as they are rooted, they should be potted, placed in a close frame for a few days and accustomed gradually to full exposure. It frequently happens that rambler and other climbing *Roses* develop very strong growths from the base of the plants late in the year. If these are not wanted to cover some bare space they should be removed.

Hardy Ferns.—It is difficult to over-water these moisture-loving plants, and when planted on raised rock-work or banks, as frequently occurs, heavy waterings will be necessary at this season to keep them in health and vigour.

Climbers.—Give attention to young, growing plants of climbers by training the shoots as they extend, and removing any that are not wanted. Plants growing on walls, particularly recently planted specimens which have not been able to extend their rooting system well away from the wall, frequently suffer from lack of moisture at the roots, and should be given copious waterings periodically.

Nymphaeas.—Where these plants are grown in tanks, old flowers and decaying leaves should be removed periodically to keep the tanks clean. The lower forms of plant life often become troublesome at this season, and should be kept in check by removing them from the water by means of an iron rake or old Birch broom.

PLANTS UNDER GLASS,

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Gloucestershire.

Cyclamens.—Seeds of the greenhouse *Cyclamen* should be sown now, or within the next few weeks. Either pans or shallow boxes may be used for raising the seedlings provided they are well drained. The best loam procurable and good Oak leaf-mould should be used in about equal parts, with plenty of sharp sand and some finely-ground mortar rubble or oyster shell added. Sow the seeds thinly to ensure sturdy growth from the start. Cover the seeds to about their own depth, water the soil in the pans lightly and place the latter in a warm greenhouse for the seeds to germinate. Cover each pan or box with a pane of glass and shade with thick paper until the seeds have germinated, when both paper and glass may be removed. Keep the seedlings growing actively near the roof glass and shade them with thin paper against strong sunshine.

Hippeastrums.—The earliest started plants of *Hippeastrum* will soon have completed their leaf-growth and they will no longer need feeding with liquid manure. Much less water will be required at their roots, diminishing the supply as the foliage becomes ripened. It will be well, also, to lift the pots from the plunging bed and place them in a position where the bulbs may become thoroughly matured, affording a free circulation of air amongst the plants. In the case of later-started plants, which are still making free growth, continue to feed the roots with liquid manure. Syringe the foliage overhead freely and close the house in the afternoons.

Propagation.—Cuttings of *Fuchsias* may be inserted now with the object of producing specimen plants for the conservatory and greenhouse next summer. The young plants should be kept growing throughout the winter. The present is a good time also to propagate *Streptosolen* (*Browallia*) *Jamesonii*. The plants may be grown on through the winter in pots in a pyramid form, or later trained against a pillar in a light position in the conservatory or greenhouse.

Souvenir de la Malmaison Carnations.—The one-year-old plants selected for growing on, as advised in a previous calendar, should now be re-potted. Use a compost comprising four-fifths of fibrous, mellow loam and one-fifth of well-decomposed hot-bed manure, with a free addition of broken charcoal, old mortar rubble, some sharp sand and a little soot. A very light sprinkling of bone-meal may be used to advantage should the loam be of a poor quality, otherwise, artificial manures are not necessary at this stage, for feeding may be resorted to when the plants re-start into growth in the New Year. The plants should be potted very firmly.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Planting Strawberries.—The planting of new Strawberry beds should be completed by this date, but if the work is in arrears, it should be finished with all possible speed in order that the plants may become established before the autumn is far advanced. Select the best and strongest runners for planting, putting two or three in one hole if a good supply of fruit is required the first year; make the plants very firm in the soil by pressing them in the ground with the toe of the boot. In most gardens ground is limited, and it may not be possible to make a full-sized new bed, but I do not advise the renovating of old beds by putting in a new plant here and there. I have heard of many complaints in this district about the beds being ruined by the excessively wet winter, red leaf disease, leather jackets, etc., and I would advise such as have been troubled to plant annually until they have a clean stock again.

The Apple Crop.—Apples are swelling to a good size and are very clean, but in many places the fruits are still dropping freely. Dryness at the roots is not now the cause, for we have had heavy rain during the past month. In these gardens and in many others, thinning was stopped owing to the fruits falling so freely, and many "doubles" were left on the trees, which means that one or the other must give way as the fruits swell, especially in the case of short-stemmed varieties, and this may account for some of the dropping, but not all, as some of the single fruits are falling, and some trees that have received no thinning whatever are thinning the crop naturally a great deal more than in previous years. All Apple trees are making good growth; newly planted specimens and grafts inserted this spring are looking well.

Plums.—These fruits are swelling to a larger size than usual, and where the crop is not too heavy they should be of good quality.

Damsons.—The *Farleigh Damson* has a very heavy crop and the fruits are swelling to a good size. The *Merryweather Damson* and *Langley Bullace*, have also cropped well and the fruits promise to swell to a good size.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Figs.—The earliest Fig trees that have ripened their second crop of fruits should be given every opportunity to ripen their shoots for next season's crop. Cut away any useless shoots, leaving plenty of space between the branches. If the trees have been inclined to grow too strongly and not finish their crop properly, it will be advisable to examine the roots to see that they have not got beyond their border limit. If they have done this, shorten them and fill in the border with fairly strong loam, to which plenty of mortar rubble has been added. Ram the soil about the roots

firmly. Should the trees flag, give the roots a thorough soaking and syringe the foliage twice daily until the roots are active again. Fig trees grown in pots for supplying early fruits should be stood out-of-doors by this date to thoroughly ripen their wood. Where the trees require re-potting, prepare a strong compost consisting of the following materials: three parts fibrous loam, one part mortar rubble, a good sprinkling of burnt earth or wood ash, and a six-inch potful of bone-meal to each barrow-load of soil. Pot very firmly and stand the trees in the open. Keep them supplied with water in sufficient quantity to prevent the foliage from flagging. Syringe the trees overhead every afternoon during bright weather.

Cucumbers.—Where Cucumbers were planted as advised in an earlier calendar, it will be found that they have made good growth and are showing their first fruits. Do not allow the latter to grow too large before using them or the plants will be greatly weakened. Continue to pinch the side growths at the first or second leaf, according to the space to be furnished. Keep the pipes warm during dull weather to promote a brisk atmosphere. This will greatly check mildew and red spider; dust the plants with flowers of sulphur immediately mildew is detected. Water the roots with great care and never allow them to become dry. All worn-out plants should be removed, the house cleaned and new beds made and replanted. If Cucumbers are required throughout the winter, select varieties that have a strong constitution, such as Improved Rochford, Butcher's Disease Resisting, and Ideal.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE
Polesden Lacy, Dorking.

Celery.—Plants of the main batch of Celery in trenches are growing rapidly after a showery month and will require attention. Decayed and maggot-eaten leaves should be picked off and the plants dusted thoroughly with old soot before earthing up is attempted. As the heads of Celery swell quickly, all plants that are being blanched in brown paper collars should be attended to regularly and the ties loosened as required. See that the roots are thoroughly moist, and, if in the least dry, give them a copious watering before earthing up the plants in the ordinary way with soil. The soil should be worked into a fine condition and pressed tightly about the plants by the hand when the ground is not too dry. It will not be many weeks before this process will have to be repeated, as Celery is making rapid growth.

Potatoes.—The crops of second-early varieties of Potatoes have benefited greatly by the recent rains and the lifting of the tubers should now be proceeded with. It is best in all cases to lift Potatoes when the weather is dry. Tubers required for seed should be selected and put aside, thoroughly ripening them off in a dry place. When this is done satisfactorily, the seed tubers may be placed in their storage quarters. Examine the tubers on wet days to remove any that are diseased and to ascertain if they are being attacked by rats and mice.

Cucumbers.—The frames in which Cucumbers are growing should be carefully ventilated during showery weather, or trouble with diseases will result. It is best to top-dress the roots little and often so soon as the roots appear on the surface of the previous top-dressing. Keep the plants well watered in dry weather and soak the roots occasionally with liquid manure. There is still time for the plants to give good returns, as hot weather may set in again and last for several weeks, indeed there are already signs of a return of summer.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE,
Lowther Castle, Penrith, Westmoreland.

Violets in Frames.—The plants will [soon be ready for transferring to their winter quarters in frames, and the necessary preparations for shifting them should now be made. A suitable compost for Violets in frames consists of two-thirds well decayed chopped fibrous loam and one-third leaf-mould which has been passed through a three-quarter-inch sieve, adding a liberal dressing of coarse river sand and a slight sprinkling of bone-meal. If the frame or pit is too deep add some mild fermenting material and tread it firmly with the feet so that the plants will be near to the light. The rooting mixture should not be less than one foot in depth. The plants

over the beds may be used as cuttings and will now root readily in pans or in pots in a close pit or frame. Any new or scarce variety of Dahlia may now be increased for next year by selecting some short-jointed side shoots and inserting them singly in small pots. If plunged in heat they will root readily and form tubers before the winter arrives. Cuttings of Zonal Pelargoniums are already inserted in many gardens and these should be kept clear of decaying leaves and have the soil stirred on the surface occasionally to keep it sweet. Excessive damp predisposes the cuttings to decay, therefore the air should circulate freely about them.

Old Strawberry beds.—So soon as the necessary runners for planting have been secured from the old bed, the ground occupied by the latter should be trenched,

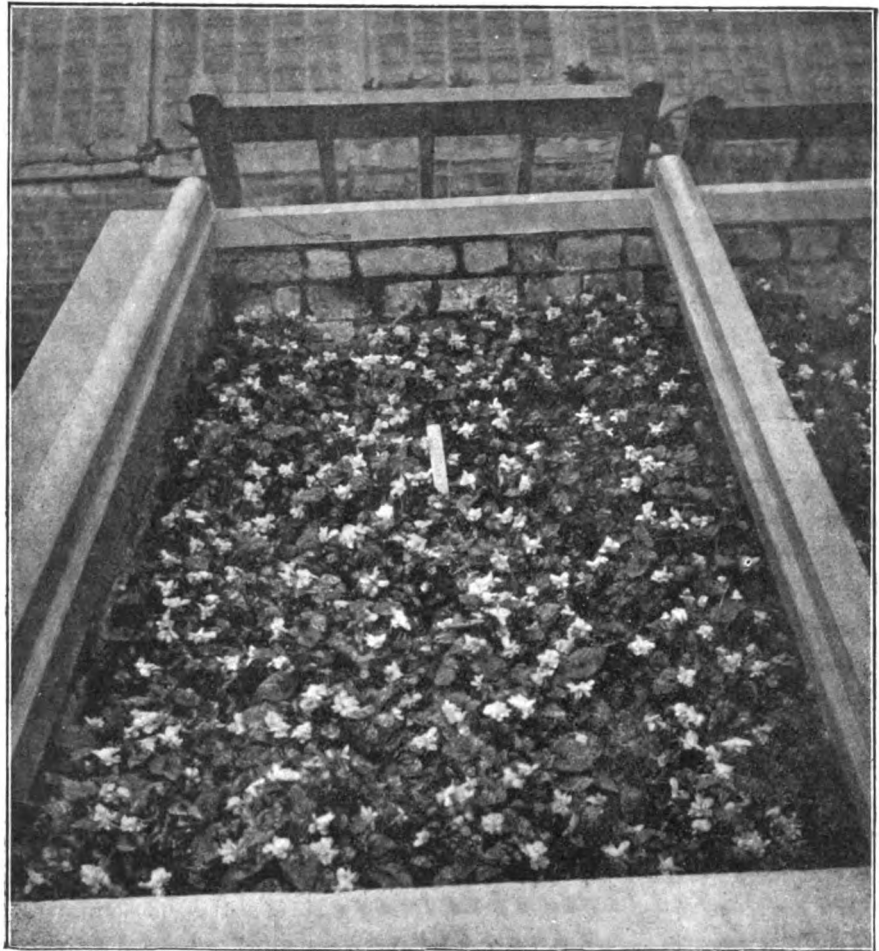


FIG. 54.—A GOOD CROP OF VIOLETS IN A FRAME.

should be put one foot apart, taking care to make the soil firm around each plant with the hand. After planting, cover the surface with a liberal dressing of sand, which will be found very beneficial during the winter and prevent damping when weather conditions render free ventilation impossible. The plants should be well watered immediately after planting and shaded slightly during the first ten days should the weather be bright. The importance of examining the plants on frequent occasions to remove any decayed foliage and of admitting plenty of air to the frames, except when frost prevails, cannot be too strongly emphasised.

Propagation.—Should large quantities of *Alternantheras*, *Iresines* and *Mesembryanthemum cordifolium variegatum* be required for next season, shoots taken when pinching

and if the trench is left open any decayed vegetation that has accumulated may be buried therein and later another trench opened in readiness for more decayed matter. The soil of an old Strawberry bed, if thoroughly trenched in this manner and well limed in early spring, will usually give good results. As a first crop to follow the Strawberries I would suggest Potatoes; this crop has the effect of cleaning and sweetening the soil for another successful crop.

Raspberries.—Immediately the fruits have been gathered cut out the old canes and train in and make secure against winds a sufficient number of young canes required for next year's fruiting. By doing this early, well-ripened canes will be ensured for next year. The new canes will also have a better opportunity to make strong growth, for their development will not be hindered through crowding.

B

FORESTRY.

THE GOVERNMENT FOREST POLICY.

(Concluded from p. 93).

For ordinary purposes the timbers mostly in demand are Oak, Ash, and Elm. The Oak we import is largely American, the produce of a different species from our native tree, and inferior to it, and before the war large quantities of our common Oak were imported from Austria and other European countries. But for strength, owing to the conditions under which it is grown, none of the imported material is equal to British-grown timber of the same kind, and it is only in length of scantling and straightness and cleanness of fibre, both of which could be greatly improved in our home-grown product, that it excels.

British-grown Ash and Elm are also much superior to imported Ash and Elm, and if a satisfactory supply of the former could be obtained very little Hickory would be used. If the day of the hard-wood forest in this country is gone, never to recur, we will soon be in a sorry plight, for there are no Empire or foreign hard-woods of the same kind which we import which are equal to those produced in British woodlands. In the temperate countries from which we draw our overseas supplies the climatic conditions are, generally speaking, of a somewhat different type from ours, and are not so well adapted to the production of strong timber of this sort as are our insular conditions.

There are thousands upon thousands of acres of good land in this country which, for obvious reasons, it is impossible to use for agriculture yet such land could be profitably utilised for the production of high-class hard-wood timber which, under proper management, and the suppression of ground game, could be naturally reproduced at a nominal cost, and would require very little after-management. These areas are, as a rule, relatively small, but in the aggregate they represent a very large acreage, and under continuous and intensive silviculture, with chiefly natural reproduction, they could be made to yield a large volume of first-class hard-wood timber annually. In fact, were it not for rabbits, Ash, Beech, and Plane seedlings would spring up in millions and, under favourable circumstances, would make greater growth than even some of the fast-growing Conifers.

But perhaps the most surprising statement in Mr. Hiley's article is that he "sees no future for Scotch Pine." In spite of all that has been said in laudation of the "newer" Coniferae, there is none of these that will ever oust the Scots Pine from our woodlands, for there is none more useful as a timber tree, and at the same time is such a good subject for the afforestation of land which is too poor for agriculture, as this species. There is certainly none among the already introduced kinds, and the prospect of still finding one is more remote than ever. If the Scots Pine is to have no future in British forestry, what Conifer would Mr. Hiley suggest as suitable for the afforestation of the waste land of which we have heard so much?

Mr. Hiley seems to pin his faith to short rotations, on which only, he says, fairly high returns are to be obtained. This may be true; but if all growers of timber, including the State, were to adopt short rotations, how long would it be before there was a glut of this kind of timber in the market, with a slump in prices? If every grower were to go in for pit-wood production, seeing that the Empire cannot meet our requirements in soft-woods, whence, it may be asked, are we to get our supply of soft-woods for house building and constructional work generally, as well as for general

joinery? We would still have to depend on foreign countries for it, for there would be nothing of home growth to take the place of the light, clean-grown Scots Pine and Spruce from Northern Europe—which has for so long provided this indispensable material—and the Empire cannot produce it. One thing is certain: it will never be produced from those Coniferous plantations which are now being formed by the Forestry Commission with a stocking, in the case of Scots Pine, of approximately two thousand plants to the acre. With double the number (the number must, of course, vary according to circumstances) there might be some prospect of producing clean-grown timber for constructional work, but not so with such wide planting as this. It will take at least from fifteen to twenty years for such plantations to close up and form pole forest, and it will take another fifteen to twenty years to kill off the fifteen to twenty year-old side branches formed under practically unrestricted growth during what should be the thickest stage of the plantations. A. D. Richardson, Edinburgh.

TREES AND SHRUBS.

CRATAEGUS PRUNIFOLIA VAR. SPLENDENS.

SEE SUPPLEMENTARY PLATE

ALTHOUGH having affinity with *Crataegus Crus-galli* and its varieties, the subject of the accompanying Supplementary Plate is quite distinct botanically, and also as an ornamental tree in the garden. Both leaves, flowers and fruits, are larger than in *C. Crus-galli*, and an important character is that the fruits fall about the same time as the leaves in late autumn.

There is no record of *C. prunifolia* being found as a wild tree. The generally accepted origin is that it is a natural hybrid between two well-known North American Thorns, *C. Crus-galli*, the Cockspur Thorn, and *C. macracantha*, a species also with very long and prominent thorns. *C. prunifolia* makes an attractive lawn specimen tree up to about twenty-five feet in height, with a rounded head of wide-spreading branches, armed with rigid thorns up to about three inches long. These branches reach the ground unless the trees are pruned and trained as standards with a single trunk. The rounded corymbs of white blossoms, each about three-quarters-of-an-inch in diameter, are freely produced in June. Before they fall in autumn, the leaves change to brilliant orange, scarlet and crimson, which, together with the rich red fruits, make this Thorn one of the very best subjects to plant for autumn colour. The variety *splendens* as grown in our gardens and illustrated in the Supplementary Plate, is the best form of this desirable tree. A. O.

SYRINGA JAPONICA.

THIS late-flowering Lilac is not so well-known, and consequently is less often seen than its early flowering congeners. It does not bloom until July when all other species of *Syringa* have finished flowering.

This *Syringa* makes a large bush or perhaps a small tree, when well established and of several years' duration; there is a fine specimen in these gardens.

The foliage is large and glossy, almost Camellia-like, and as conspicuous as that of the Camellia, while the small white flowers are borne on branching panicles larger in size than those of other Lilacs.

Another name by which this plant is known is *Ligustrina amurensis* var. *japonica*. *Syringa japonica* is not only ornamental in its habit of growth, its late-flowering giving it an added value among shrubs. C. Turner.

MITRARIA COCCINEA.

THE bright scarlet, drooping flowers of this fine shrub have been very freely produced this season, and although not in such profusion as to mark it as an effective plant in the garden

few connoisseurs of fine plants would pass it by without paying tribute to its beauty.

The small, dark green, glossy leaves make a perfect setting to the scarlet, curiously-shaped flowers which are carried on slender footstalks about two inches long, the flowers being urn-shaped with a five-lobed lip through which the pistil and two anthers protrude.

As the seed pod is swelling, the pistil also increases in length until it is nearly two inches long, remaining firmly attached to the ovary, around which the three lobed calyx clasps itself firmly, and it is from the shape of, or in reference to the seed pod that it receives the name of the Mitre Flower.

Mitraria is a monotypic genus, and a native of Chiloe off the coast of South America: it was introduced to this country in 1848, but it is only in the more favoured parts of Great Britain and Ireland that it may be expected to succeed in the open even when given shelter. I find that a shaded place suits it extremely well, and would not on that account recommend planting it in the full exposure to sun, even in our coast districts, but given partial shade, it soon forms a neat bush some two or three feet high. If planted near some taller growing subject its shoots develop a climbing habit, and in this way it reaches a greater height.

Mitraria coccinea is easily increased either by seeds or cuttings; the latter should be inserted in pots of sandy soil and placed in an intermediate house towards the end of September. A. T. Harrison, Culzean Castle Gardens, Ayrshire.

POMADERRIS APETALA.

THIS is a rare Australian plant with luxurious evergreen foliage, a member of the Rhamnaceae: it forms a shrub, and is a choice subject for a sheltered position. It should be planted where it does not get early sunshine after spring frosts as the margins of the leaves are apt to become injured, thus disfiguring the plant. A west wall is the best position. W. Auton.

VERONICA DIOSMAEFOLIA.

THIS New Zealand shrub has been uninjured through the succession of recent mild winters, and for some weeks past has been flowering freely in a Scottish urban garden.

Less stiff in habit than many of its congeners, the slender stems bend to the breeze and combine gracefulness of form with considerable floral effectiveness. Indeed, in the mass, it appears as if enveloped in a mist of delicate lilac, so profuse is its flowering.

The plant is slow in growth and flowers when quite small, so that it is suitable for planting on a ledge in the rock garden.

In the shrub border in maritime or especially favoured districts it forms a bush several feet in height. Fred W. Jeffery.

SOLLYA HETEROPHYLLA.

THIS twining shrub, which is commonly known as the Australian Blue-bell, is sufficiently hardy for planting against a warm wall in the open in mild districts. The slender, sinuous stems, which will ascend wire or trellis to a height of four feet to six feet, are furnished with deep green, pointed leaves very like those of *Myrtus Luma*. The bell-shaped flowers, produced in loose sprays on delicate hair-like stems, are a lovely Gentian blue and these a well-grown plant will yield in abundance from May to November.

S. heterophylla is a sun lover and grows well in a light soil that has been enriched with leaf-mould and a little well-decayed cow manure, the same being used as a spring top-dressing.

Should the branches get injured by frost the crown will often break away freely, therefore a mound of ashes placed over the latter may be instrumental in saving the loss of the plant.

S. heterophylla is by no means difficult to strike from cuttings which should be inserted in late summer. A. T. J.

NEW NOTES.

THOUGH comparatively few in numbers when considered in contrast with the great wealth of hardy trees and shrubs flowering in spring, several delightful and showy subjects are at their best during August.

The most conspicuous and beautiful shrub or small tree in flower at the present time is *Eucryphia pinnatifolia*. Flowering towards the end of July and during early August, it is an evergreen plant of very distinctive beauty. The large, pure white petals surrounding prominent clusters of stamens, suggest white blossoms of *Hypericum calycinum*. This year, so freely are the flowers produced, the branches are bending with the extra weight. Being a native of Chili, it should be planted in a position that will afford a certain amount of shelter, this being particularly desirable in the plant's early stages of growth.

and branching plumes of rosy-pink blossoms. It is a shrub of great beauty and valuable for planting in masses. The Common Tamarisk is freely planted on the cliffs of maritime districts. The species under review is a more effective shrub when consideration is given to the desirability of hard spring pruning in order to secure the long, vigorous annual growths terminating in the large, plume-like inflorescences.

The recent heavy rains and dull days have been very favourable to the development of the blossoms of *Rhododendron auriculatum*. The specimen flowering is now ten feet high, and ten feet in diameter, being one of the original plants raised from seeds collected by Mr. E. H. Wilson in western Hupeh, China, during 1900. Mr. Wilson describes it as growing in semi-wooded areas, and, following the collector's advice, this species and others of the large-leaved group are planted in half-shade. As the plant flowers in August, when the sun is

differs from that species in the gaunt, sparsely branched habit, the leaves being unequally cordate at the base, and the presence of distinctive glands on the exterior of the corolla, with a blotch or stains in the throat.

R. serotinum is a native of Western China. Seeds were sent to the Jardin des Plantes, Paris, by the French Missionary, Père Delavay, in the late eighties of the last century. Seedlings were obtained for Kew from Paris in 1889, and it is one of the original plants which is flowering so well in the Himalayan House. It is only during quite recent years that the true beauty and value of the species as a late flowering shrub has shown itself. Interest has also been focused on the plant since the introduction of the true *R. decorum* by Mr. G. Forrest.

R. serotinum is of loose branching habit. The specimen at Kew is about fifteen feet high; the oblong elliptic leaves are four inches to six inches long, and one-and-a-half-inch

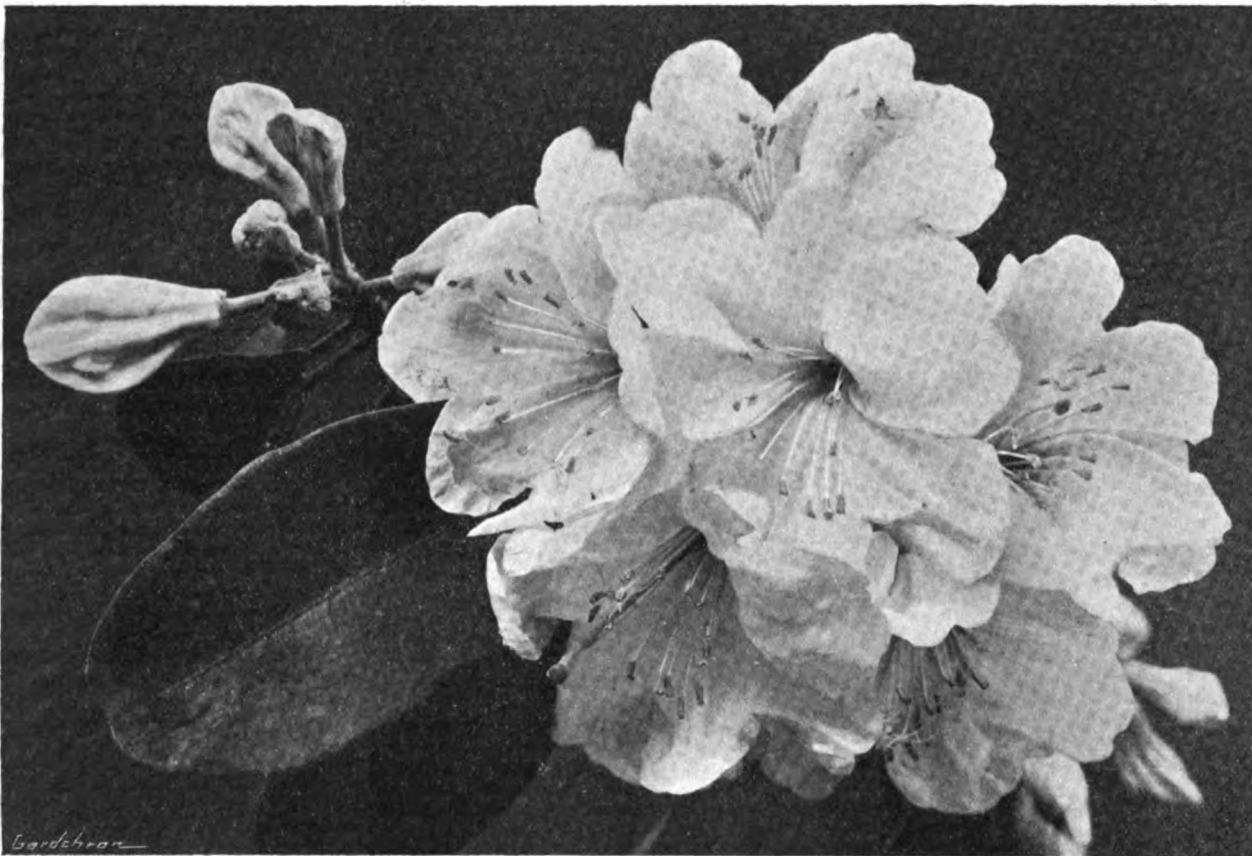


FIG. 55. RHODODENDRON SEROTINUM.

Ehretia acuminata is a tree of singular interest, being a hardy, woody, member of the Natural Order Boraginaceae. It grows some twenty feet high, is of spreading habit, with a trunk girth of about two feet. The small, white blossoms are freely produced in terminal pyramidal panicles during the second half of July and the second half of August. The tree is deciduous, and a native of China and Japan.

Though listed in most tree and shrub catalogues, the shrubby *Pavia*, *Aesculus parviflora* (syn. *macrostachya*) is by no means freely planted. The bush grows up to ten feet to twelve feet in height, and forms suckers which provide a good means of propagation. The cylindrical panicles of white flowers are freely borne in late July and early August. A native of the south-eastern United States, the shrubby *Pavia* is said to have been first introduced to British gardens in 1785.

The autumn-flowering Tamarisk, *Tamarix pentandra*, nursery synonyms of which are *T. hispida aestivalis* and *T. Pallasii*, is most effective with its tender, green, feathery foliage

very powerful, such a position is very desirable to protect the blossoms. While most shrubs, including *Rhododendrons*, produce the best flowers on the upper and most exposed growths, practically all the trusses of flowers of *R. auriculatum* are borne on the less exposed shoots. They are deliciously fragrant and the perfume is quite noticeable at a distance. The large, white, funnel-shaped blossoms average five to eight in a truss. This year the Kew plant is bearing nearly fifty trusses, the largest number the bush has so far borne in one season. It is curious to note that another specimen five or six yards away of the same age and size is now producing its first truss.

In the Himalayan section of the Temperate House, a large specimen of *Rhododendron serotinum* (Fig. 55) is flowering freely. It belongs to the Fortunei and *decorum* section, in fact, until about five years ago, when *R. serotinum* was figured in *The Botanical Magazine* tab. 8841, the Kew plant was labelled *R. decorum*. The true *R. decorum* was figured in *Bot. Mag.* tab. 8659. *R. serotinum*

to two-and-a-half inches wide, glabrous, dull green above, glaucous green beneath. The flowers are deliciously fragrant, seven-lobed, and borne six to eight in a truss; they are white with distinct purple-crimson stains in the throat.

Specimens of *R. auriculatum* and *R. serotinum* from Kew were exhibited before the Floral Committee of the Royal Horticultural Society on the 11th. inst and both received Awards of Merit, as stated on page 138 in the issue for August 15.

The illustration of *R. serotinum*, Fig. 55, is reproduced from a photograph of the specimen which gained the award.

The gardens are exceptionally beautiful this year owing to the recent heavy rains; a wet summer is suited to Kew, for the soil is very shallow and quickly dries up in time of drought.

The new Rose beds planted in the neighbourhood of the Palm House have been very good, and there is promise of another fine display a little later in the season.

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

It is interesting at this season to note the various devices of flowering plants for the dispersal of their seeds. Many members of the vast Order Compositae rely on the winds for that purpose, nor do they rely in vain, each achene or seed being equipped with a pappus, that is a plume of hairs of exquisite delicacy, which acts as a parachute, carrying its burden sometimes for many miles. The common Dandelion presents a typical example of this arrangement. It requires a lens of only moderate power to disclose the beautiful symmetry of its sphere of simple branched hairs.

This means of dispersal is so effective that some species of Orders widely different from the Composites seem to have taken the hint and adopted it. For instance, in the Rose Order so many of which rely on the succulence of such fruits as Strawberries, Cherries, Peaches, Blackberries, etc., to ensure seed dispersal, there occurs a strange bit of mimicry in the Mountain Avenas—*Dryas octopetala*. This lowly alpine is just now conspicuous with its pappus of white feathery awns an inch long. On the other hand, the Common Daisy, although a thoroughbred Composite, has discarded, or has never acquired, a hairy or feathery pappus. Yet it succeeds in spreading as successfully as any British herb, relying apparently on its minute seeds adhering to the feet of men or beasts. In another Composite, the Burdock—*Arctium Lappa*—the seeds are crowned with the pappus of bristles so short and stiff that they cannot serve for flight; but effective provision for dispersal is provided in the strong, sharp hooks on the involueral bracts, which cling to the human garments or the fur of animals to be carried in all directions.

This device has also become hereditary in the Hound's Tongue family, *Cynoglossum*, the only objection to *Cynoglossum amabile*, a recent introduction from China, consisting in the hooked burs which succeed the lovely blue flowers. These cause intolerable irritation to any dog or other animal that gets them entangled in its coat. Now *Cynoglossum* belongs to the Order Boraginaceae, whereof most genera produce smooth little nuts, so intensely hard that the Gromwells have earned the title of *Lithospermum*, that is, "stone-seed." It is difficult to imagine how these small, white seeds got transported to a suitable resting place, but it comes to pass somehow.

Returning for a moment to the Composites, the late Lord Avebury drew attention to alternative means of dispersal adopted by the garden Marigold—*Calendula*.

—"Three devices for dispersal are united in each head. The outer achenes are narrow and bent into a curve forming three parts of a circle, and well-adapted to hang on to the hair of any passing animal, then follow a certain number which are puffed out with wide wings, and are evidently intended for dispersal by wind. Towards the centre, the achenes are smaller, and much resemble small green or brown caterpillars. These, it has been suggested are picked up by birds and dropped when they discover their mistake."*

No device for dispersal is more effective than the winged seeds of the Sycamore, which have enabled this native of Central Europe to become thoroughly naturalised in the British Isles. Indeed, so widely are these seeds wafted by the winds of autumn, and so readily do they germinate when they lodge in suitable ground, that if northern England and Scotland were to become derelict and tillage were to cease, wide tracts of land would become pure Sycamore forest. In Scotland the Sycamore—*Acer Pseudoplatanus*—is invariably spoken of as the Plane, but the true Plane, *Platanus orientalis*, belongs to a very different Order—*Platanaceae*. Like the Sycamore, however, it relies on the wind to distribute its seeds, which hang all the winter in two to seven globular tassels upon a single peduncle. These break up in dry March weather

releasing the seeds, and it was gravely asserted in the newspapers two or three years ago that these were the cause of the prevalence of influenza in London, owing to the pulmonary irritation they caused; that irritation which has never been more than trivial, in this country, is due, not to the seeds, but to the release of a white stellate pubescence from the young leaves, which was known by Galen and Dioscorides to cause serious bronchial trouble in southern Europe.

The Meadow Saffron—*Colchicum autumnale*—prepares its seeds in very cryptic fashion. The ovary, enclosed within the tube of the perianth, is formed under ground, and remains there through the winter, and is thrust up in spring that the seeds may be ripened in the sun. No special provision is made for their dispersal; and as for the various species of *Cyclamen*, it would almost seem as if precaution had been devised to prevent the seeds scattering; so closely does the peduncle coil up when the flower fades as to deposit most of them on the broad, flat top of the tuber.

Very conspicuous in August are the arching wands of the South African *Dierama pulcherrima* five or six feet long, making a beautiful group when hung with their crimson or rose-pink bells dancing in the breeze. Beauty, however, is, as it were, but a bi-product of the scheme: the serious function of these graceful rods is that, when weighed down by the ripening seeds, they shall be deposited quite clear of their parent.

Lastly, lest this note should run to unreasonable length, some plants are endowed with the faculty of expelling their seeds to a considerable distance. The strange leafless Toothwort, *Lathraea clandestina*, which may easily be established as a parasite on the roots of Willow or Poplar, establishes its colonies in that manner. So soon as the fleshy capsules become ripe, a slight touch on their tips causes them to fly open and fling the seeds far from the parent plant. *Herbert Marwell, Monreith.*

FORMAL FLOWERS.

THE taste of the general public seems to swing like a pendulum from one generation to the next and its present phase is bringing back into popularity several modes and fashions among flowers that had passed out of favour. Magenta is being appreciated for its colour value, perhaps on a hint from China. Tight little Victorian nosegays have been familiar for some years past in the windows of florists' shops, and it is not surprising that the flowers of which they are composed should begin to reappear in our gardens, for the factors that determine public taste act as strongly upon gardeners as upon other people, though perhaps less rapidly.

No one will deny a peculiar charm to such formal flowers as the old Quilled Daisies, Gold-laced Polyanthus, striped Marigolds, and flamed Tulips. But it is hard to explain their attraction, still more to reconcile it with a strong liking for the grace and distinction of the unmodified species. Yet it is neither impossible nor even unreasonable to have an affection for both kinds of plant, the cultivated and the wild. Their different values become clear when we bring them into the house. The species often looks out of place in a room, and its flowers lose their grace when they are separated from the plant of whose design they formed a part: sometimes their colour loses its quality, as in *Iris Hoogiana* whose clear lavender-blue is apt, as Mr. Dykes has pointed out, to turn dull and lifeless when the flowers are brought in out of the sunshine. Even such domesticated flowers as the Daffodil have retained enough wildness to look ungainly when taken out of their natural setting of grass or woodside.

It is quite otherwise with the formal flowers. Their emphatic lines may seem out of place in the garden, but in the house they harmonise with the sharp, straight sided designs of walls and furniture. They may seem too large or too stiff for the plant that carries them, but the disproportion vanishes when they are

arranged in a vase, where they seem completely in their place.

Florists' flowers are not chance begotten freaks, but the result of patient development along lines that are pleasing to the majority of people. This becomes clear when we see that mere chance variegation or doubling of a flower is not sufficient to make it popular. The splashed Tulips did not become really attractive until the florists had conventionalised the variegation to suit the symmetry of the flower; the variegation of the English Iris seems actually to detract from the beauty of the flower, perhaps because, in some obscure way, it does not harmonise with the complexity of its design. Doubling is more generally attractive since it adds to the life of the flower and strengthens its perfume, but it does not suit the bell-shaped flowers, possibly because the idea of a double bell suggests a practical absurdity, and few of them have become generally popular.

The description "formal flower" is used specifically of the Quilled and double Daisies, the Turban Ranunculus, the Pompon Dahlia, the exhibition Polyanthus, and Auricula, the Laced Pinks, and double Primroses, the florists' Tulip and other flowers like them, but although many wild flowers are formal in their simple and regular design, they are not formal flowers in the garden sense of the word, which is quite clear from its use though not easy to define.

If these flowers sometimes look ungainly in the garden it is only because they have been placed where they challenge comparison with the unmodified types, their choice setting is not only in the house, but in the formal garden. As the formal garden seems to be returning to popularity, we may expect to see the flowers that suit it so well reappearing again in something like their old numbers. *F. A. H.*

BULB GARDEN.

ALLIUM CYANEUM.

THE Alliums, or Garlics, include numerous bulbous plants of much greater beauty than is generally believed, and those who have tried the various species in order to learn what the plants are really like, have been impressed with the charms of some of their features.

Among the many I have tried, the little *Allium cyaneum* has been one of the most attractive, especially in considering what small bulbs were worthy of a good rock garden. It is in commerce, too, and this is an essential consideration with the many, while its cost is quite moderate. The plant grows easily in any light soil, and is specially well adapted for places in the rock garden which can be carpeted with a late alpine. It flowers about June with me, and has been hardy since I first obtained it some years ago.

A kansuense, a later introduction, is allied to it, and is probably only a form of it from another district and rather different in colour. I have grown both, and cannot say that I prefer it to *A. cyaneum* itself. Those who possess Mr. Reginald Farrer's *English Flower Garden* will find in the appendix (Vol. ii, p. 491) an interesting note regarding *A. cyaneum* and its allied species or forms. I have not space to discuss these in detail, and shall confine myself to *A. cyaneum*, as supplied by the trade. It is a graceful little plant, some six inches or so high, with grassy leaves and charming little heads of drooping, bell like flowers of a most delightful blue. Bulbs may be secured in autumn and planted two inches deep.

TULIPA FOSTERIANA.

A PLENTIFUL choice lies before those who admire the species of Tulip which remain as they came from their natural habitats. One which should not be forgotten is *Tulipa Fosteriana*, which was described in *The Gardeners' Chronicle* 1905, Vol. xxxvii, p. 268.

It is as yet rather an expensive species but is one of the finest of them all. It is a tall plant with very large flowers, which are of a most brilliant vermilion-scarlet with a yellow centre. *S. Arnott.*

* *British Flowering Plants*, p. 234.

HARDY FLOWER BORDER.**SALVIA PRATENSIS.**

THIS very rare native plant is one of the best of the Sages, the glorious blue colouring of its flowers rivalling that of *S. patens*.

It is usually found wild in dry pastures and waste places. The plant is perennial and produces a spreading tuft of short, stalked, radical leaves, ovate or heart-shaped, three to six inches long, toothed, and very much undulated.

The stem is about one-and-a-half foot in height, somewhat downy, with a few narrow leaves near the base; the flowers are arranged in a long and beautiful terminal spike, simple or very slightly branched, with whorls of six or seven flowers, arranged at regular intervals; the colour is a rich and pure blue and the flowers have a long, arched upper lip.

I have been much impressed with the rare beauty of this indigenous plant during the present season; planted in generous masses it would be very lovely.

It is distributed over Central and Southern Europe to The Caucasus, extending northwards into Sweden and to the French shores of the English Channel. The plant is rare in England. The Meadow Sage is figured in *Eng. Bot.*, t. 153. *Ralph E. Arnold.*

WATER GARDEN.**BUTOMUS UMBELLATUS.**

THIS somewhat rare native Aquatic is worthy of general cultivation, and is very easily accommodated on the margins of ponds or streams. It is a beautiful hardy perennial, the radical leaves being from two or three feet in length and as the derivation of the generic name, *bous*, an ox, *temno*, to cut, indicates, are somewhat sharp, so sharp it would seem, they they would injure the mouths of cattle.

The flowers are rose-pink, and produced in the umbel; the pedicels have sheathing bracts at the base; the scape is naked, terete and longer than the leaves. The inflorescences are produced during the summer months.

Butomus umbellatus is generally distributed, but never commonly, over the greater part of England. It is an ideal plant for small or large water-gardens and is very easily established. *Ralph E. Arnold.*

EICHORNIA SPECIOSA.

EICHORNIA speciosa (syn. *Pontederia crassipes*) is one of the most interesting and beautiful of half-hardy aquatics.

It is a native of South America, and has curious, inflated leaves floating on the surface of the water, and bears spikes of delicate lavender-blue flowers, with a showy purple blotch on the upper sepal. The flowers are produced in abundance in erect spikes, and arranged similarly to those of a Hyacinth, hence its popular name, "Water Hyacinth."

This plant does splendidly out doors during the summer, and is well adapted for growing in small aquariums or any vessel of water without soil. *W. L.*

ALPINE GARDEN.**CAMPANULA HALLII.**

THIS delightful dwarf hybrid *Campanula* has undoubtedly taken a permanent place among rock garden plants. It was raised some years ago by Mr. Alva J. Hall of Harrogate, and I first saw it there in his nursery just before he distributed it. It is a hybrid from *Campanula pusilla*—I forget what the other parent was—and it has much of the habit and all the charm of *C. pusilla*. The plant is dwarf, dwarfer than many forms of *C. pusilla* or the ordinary *C. pusilla alba* of gardens, and it has the same

habit as *C. pusilla* of running under ground.

The flowers are pure white, very firm and solid in texture, and are in the form of fat little rounded cups, as opposed to the conventional more or less bell-shape of most *Campanula* flowers. It is this shortened, rounded tubbiness, together with their solidity and gleaming whiteness which gives the flowers of *Campanula Hallii* their special charm and distinction. The plant, moreover, has the added value of being imperturbably hardy, free-flowering, and easy to grow. It will spread freely in any good soil that is reasonably light in texture, and flowers with the utmost freedom. And it blooms, moreover, in July and August when rock-garden flowers are becoming all too scarce, and the worried rock gardener is tempted to fall back upon the use of all sorts of unsuitable plants to make up for the lack of real alpine flowers.

To show off *Campanula Hallii* at its very best, I would suggest planting it in a pocket

and every summer since it has flowered here regularly.

It is a tiny species, the flowers only reaching the height of a couple of inches. The colour is rosy-pink, a much purer pink, with less lilac, than the majority of species. The small, dainty flowers are extremely pretty, yet fleeting. The sort of thing that one plants on the rock garden, preferably under some carpeting plant, such as *Thymus Serpyllum*, and then forgets all about until it suddenly bursts into flower in July or August, remains for a few days, disappears, and is then forgotten again for another twelve months.

The seed vessels make their appearance in early summer, and the foliage, as one might expect for so small a plant, has not that tiresome coarse habit of the larger *Colchicums*, such as *C. speciosum*, etc.

Farrer reports the plant as growing at Mount Cenis, but I have hunted for it very



FIG. 56. ROCK-GARDEN AT TONGSWOOD.

(See p. 151).

in a fairly well-raised position where its dumpy port may be seen in outline or profile. A birds' eye view of it is much less attractive. Such a pocket may also be planted with some small spring bulb—a miniature *Narcissus*, a choice *Crocus* species, or what not. My partner has made a most effective planting of it in his garden as a wall plant, where the plant has filled the soil which points the warm brown stone, and is now a mass of glossy deep emerald-green and purest white.

COLCHICUM ALPINUM.

THIS tiny species of *Colchicum* or "Autumn Crocus" has always remained extremely rare in gardens. It is rare, too, in nature or rather local, for where it occurs it grows by the thousand or million.

In July, 1922, I was collecting at Val D'Isre, and there the short meadow grass was in places sheeted over with enormous quantities of this dainty flower. Like all turf-haunting bulbs it is rather tiresome to collect, but I brought home with me a fair quantity of bulbs,

many times there and never come across it. Mr. E. A. Bowles writes enthusiastically about *Colchicum speciosum*, but I imagine that it would be found in very few gardens in this country apart from his own, and the comparatively small number of plants which I have here. I wish now that I had been more diligent when I found it in 1922 and brought home a larger number of the bulbs. I might this summer have obtained it again, but the thought of crossing a nine-thousand foot Col, digging the tiresome little bulbs in tough turf, and then recrossing the Col, discouraged me, and in the meantime I must depend for increase on a fairly plentiful supply of seed which matured this summer.

If any collectors should be visiting Val D'Isre, it is to be hoped that they will bring home a good supply of this charming species, and although it is so rare they need not fear exterminating it, for, as I have stated, where it occurs it grows by the million or more. *Clarence Elliott, Six Hills Nursery, Stevenage, Herts.*

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THE GARDEN IN ANTIQUITY

X.—GLEANINGS FROM THE CHINESE CLASSICS

IT is well-known that the Chinese have always been proud of the fact that they possess a number of ancient works written, compiled, edited or otherwise handled by their great sages, and classed to-day among the sacred books of the East. These are available in the monumental series which were given to the world some years ago with the imprimatur of Prof. Max Müller. I shall content myself, however, in this chapter, with a brief study of the first two volumes of the Chinese Classics, as published in Chinese and English by the late Dr. Legge, comprising the Confucian Analects and the works of Mencius. From these we learn something of the state of horticulture and agriculture in the Celestial Empire some 500 B.C. We gather that tools were in use, ground was brought under cultivation or allowed to lie fallow, grain was grown and distinguished from spurious forms and from Cockle, Darnel, or other weeds; fruits were grown with care, and the various kinds identified by means of specific names; plants useful for health as well as for food were specified, and a distinction drawn between wild forms and those which had been brought under cultivation. All this is purely incidental, and is, therefore, from the standpoint of the historian, of even greater interest than if the writers had been devoting special attention to the garden and the farm for the sake of showing how advanced a stage of culture and cultivation had been attained. Mencius is even richer in allusions than Confucius, but it is interesting to notice in the first place that they frequently employ identical terms, the one with the other, and, in the next place, that many of the names of plants, as well as the words for garden and gardener, park, tool and husbandry have remained in use till the present day. Allusion has already been made to the words for the garden and park; I now proceed to the further analyses.

There are, in the Classics, frequent allusions to plants in general as flowers, grass, foliage, trees, herbs, weeds, grain and the like, showing that these were as familiar then as now in conversation and literature. Take first an interesting reference to flowers, known as *Hwa* or *Fa*. How curious it seems to find in a book between two and three thousand years old, an allusion to the trembling leaves of the Aspen. "How the flowers of the Aspen-plum flutter and turn!" (Legge 1, 90). The native commentators have written learnedly about this plant, which seems to have been some kind of Cherry or Plum which was constantly in motion even when there was no wind. Many species of stone fruit are cultivated in ancient China, together with others belonging to other groups, such as the Mulberry and sour Date. There are, however, two points worthy of observation here. The first is that the word for flower, blossom or foliage, is the same to-day as in the times of Confucius; the second is that observation was made of the movements

and life of plants and became matter of conversation and simile. Commenting on this passage, one native authority speaks of the flowers of this plant as continually opening and shutting. Such observation was not uncommon. Confucius remarked on one occasion that "When the year becomes cold then we know how the Pine and the Cypress are the last to lose their leaves." Here he was using the illustration in order to show how men are known in times of adversity, and everyone must admit the beauty of the figure. It may be noticed in this connection that one of the disciples of Confucius, Tszehwa, derived his name from the word for flower (*hwa*).

In one place (Legge 1, 236). Confucius quoted from the *Book of Odes*, "In the book of poetry it is said: that peach tree, so delicate and elegant! How luxuriant is its foliage!" And again there is a figurative allusion to the charm of the young bride going to her new home to beautify it by her presence. Poetry like this is exquisite; alas, that life should be so prosaic! Among the flowers mentioned in the *Odes* is a fragrant Paeony. In Mencius, in

showing us that already in those days the silk worm was fed with the leaves and its cocoon used for the manufacture of garments. Allusions are also made to such fruits as the Date, the Persimmon, the Jujube, and others. I give one of the similes from Mencius: "He who nourishes the small and worthless is a little man (he says), while he is the great man who nourishes the great. Here for example, is a gardener or plantation keeper who neglects the choicest plants and cultivates the wild Date. He is a poor gardener." The full beauty of the passage cannot be seen in translation, since we have no English names for the different trees here specified. The wood of the Date and Almond were employed for getting fire by friction in summer, while the Elm and Willow were used in spring.

In addition to fruit trees already named, many references are made to the Chestnut, Pine, Cypress, Willow, tree Euphorbia, and other plants which were either cultivated or made use of for a variety of purposes. The plough, hoe, spade and other tools were in use and we read often of cultivating, weeding

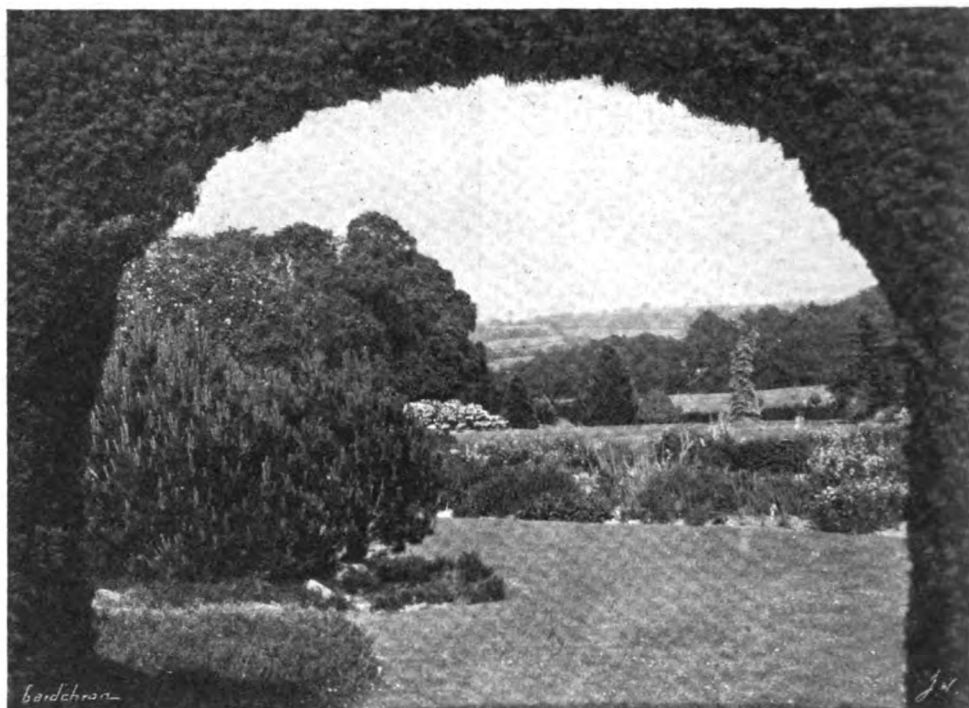


FIG. 57.—TONGSWOOD: VIEW ACROSS THE GARDENS TO THE WEALD OF KENT.

(See p. 151).

order to show that the man must needs go out of the world who will not associate with those of whom he cannot approve, one uses this figure. Chan Chung lived for three days without food as a recluse in a poor barren district till he could neither see nor hear. Over a well there grew a Plum tree the fruit of which had been more than half eaten by worms. He crawled to it and tried to eat some of the Plums, and after swallowing three mouthfuls his sight and hearing returned. Not many preachers to day would find it easy to surpass that for subtlety and suggestiveness. Compare the illustration of the truth that it is the end which crowns the work. "The Master said—there are cases in which the blade springs, but the plant does not go on to flower! There are cases where it flowers, but no fruit is subsequently produced" (Legge, I., 87).

To the Plum, the Peach and the Cherry we may add the Mulberry as a fruit tree cultivated in ancient China. "Let Mulberry trees be planted about the homesteads and persons of fifty may be clothed with silk," says Mencius when addressing the King of Llang (Legge ii, 7),

and other gardening processes. The Chinese excelled in the art of growing various cereals and grains, so that Pulse, Rice, Millet, growing Corn, spurious grain, Darnel, as well as sundry kinds of herbs and vegetables are continually mentioned. "If the seasons of husbandry be not interfered with," says Mencius (Legge ii, 6), "the grain will be more than can be eaten." Sowing, weeding, harvesting, each had their season.

In spring, summer and autumn, the work-people must be at their tasks, and Nature will reward them a hundred-fold, so that "no eating power will be adequate to the grain," as the original expresses it. It is usual to speak in China of the five grains, just as we speak of the four seasons or the seven planets. The virtues of husbandry are extolled and enforced from history. While one of the ancient kings was skilled in archery, and another was clever in other ways, neither of them died a natural death. "But Yu and Tsieh personally wrought at the toils of husbandry, and they became possessors of the Empire."

In Mencius we find a passage which forcefully

reminds us of the teachings of the New Testament. Darnel grew amongst Wheat, and might be mistaken for it. The moral is obvious. "I hate a semblance which is not the reality," said Confucius. "I hate the Darnel, lest it be confounded with the corn" (Legge, ii, 377).

Many plants were cultivated or esteemed for their medicinal or other properties. We are told many interesting things about Confucius and among others it is recorded of him that he was never without ginger when he ate: showing that he had learned the value of a stimulating condiment or stomachic. In hot countries these are usually greatly relished. China has long been famous for its preserved ginger, under its ancient name *Kiang*.

We are thus led to the subject of herbs and herbalists, of physic gardens and medicinal plants. The Chinese word for physic is derived from the symbol for herbs, just as our word drug comes from a root meaning to dry, because dried herbs were the most usual medicines. A friend once sent Confucius a present of some medicine, compounded, as the word implies, of herbs, possibly containing the famous Ginseng. He bowed politely as he took it from the messenger, but said "I do not know it. I dare not taste it." There are interesting allusions in the works of Mencius to the use of Mugwort or Moxa as a medicine. This is a species of *Artemisia* still largely employed in China, for various purposes. On account of its pungency it is burnt to dispel odours, and on the fifth day of the fifth moon it is hung at the doors as a charm. "The case of one of the present princes wishing to become emperor is like having to seek Mugwort for three years old to cure a seven years' sickness. If it have not been kept in store the patient may all his life not get it," (Legge, ii, 177). Medicine must cause inconvenience or it is valueless. "It is said in the *Book of History*. If medicine do not raise a commotion in the patient his disease will not be cured by it" (*ib.* iii).

The references are by no means exhaustive, but serve to show how advanced were the ideas of the Chinese five centuries before our present era in relation to horticulture and agriculture, the growth of flowers, fruits, vegetables, cereals and trees, as well as the various uses to which they might be applied, and the lessons which might be adduced from their study. *Hilderic Friend*.

(To be continued.)

DABTON, DUMFRIESSHIRE.

I HAD frequently heard of the hardy flowers in the beautiful garden of Mr. C. W. Ralston, Chamberlain to the Duke of Buccleuch, at Dabton, near Thornhill, Dumfriesshire, and I looked forward with pleasure to a visit—a prospect whose fulfilment surpassed expectations. Dabton lies in a lovely finely wooded country, of a diversified nature. The house is a commodious one, surrounded by fine trees, some of great age and beauty, and with *Rhododendrons* and a variety of other shrubs. The glory of the garden lies in the herbaceous borders, which are not only stocked with a great variety of good plants, but the latter are admirably arranged and thoroughly well-grown.

The walled garden is about three acres in extent, and affords an opportunity of creating long, broad borders which are in harmony with the size of the place. Masses of a superior form of *Pink Mrs. Sinkins*, similar masses of a lovely dwarf, rather trailing hybrid *Pink* without name, but coming near *Fettes Mount* in colour and formation of flower, though different; masses of a form of *Cheiranthus mutabilis*, *Helianthemums* and other dwarf flowers, occupy the front of the border and hang over and almost cover the stone margins which have replaced the Box edgings that previously existed. Behind them are large plants of many genera, species and varieties. Conspicuous amongst them are tall *Campanulas*, the dwarf ones finding a place near the front of the border—*C. lactiflora*; *C. latifolia macrantha*; *C. persicifolia*, in many fine forms; *C. latiloba*

(syn. *grandis*), and masses of *C. glomerata dahurica* are all highly effective. Spikes of fine *Delphiniums* are conspicuous and *Lupins* of many shades of colour are equally effective. The old Spiderwort or *Tradescantia* is included, also such *Centaureas* as *C. babylonica*; *Verbascums*, including a number of choice varieties of *V. phoeniceum*; *Lychnises*, *Heleniums*, *Inulas*, and other yellow *Composites*. *Monarda didyma* had not done so well as usual owing to the dry season, and the *Incarvilleas* have given trouble by their comparatively short life. The showy hardy *Geraniums*, represented by *G. nepalense*, *G. pyrenaicum* and others were bright in the glorious sunshine of a perfect day.

The pretty *Lysimachia clethroides* with its drooping spikes of white flowers, and the stiffer *L. Ephemereum* are both grown at Dabton, and the day-blooming *Oenotheras* are represented by *O. Fraseri* and the variety *M. Cuthbertson*. *Irises* are favourites, but at Dabton, as in numer-

TONGSWOOD.

TONGSWOOD, the residence of C. E. Gunther, Esq., takes its name from the village of Tongs, near Hawkhurst, Kent, and is not far from the Sussex border. These gardens and extensive pleasure grounds are both exceedingly interesting and maintained in fine order, for the owner is a keen horticulturist.

A most delightful panorama of landscape, stretching far away over the weald of Kent, is presented to the view when standing on the terrace seen in Fig. 57. The undulating land, dropping down to the valley in the distance, is planted with a variety of most beautiful trees, the effect being as fine as any to be seen in this part of the "Garden of England." The wood from which the place derives its name is seen on the right. In early summer extensive plantations of *Rhododendrons* in bloom give their quota of

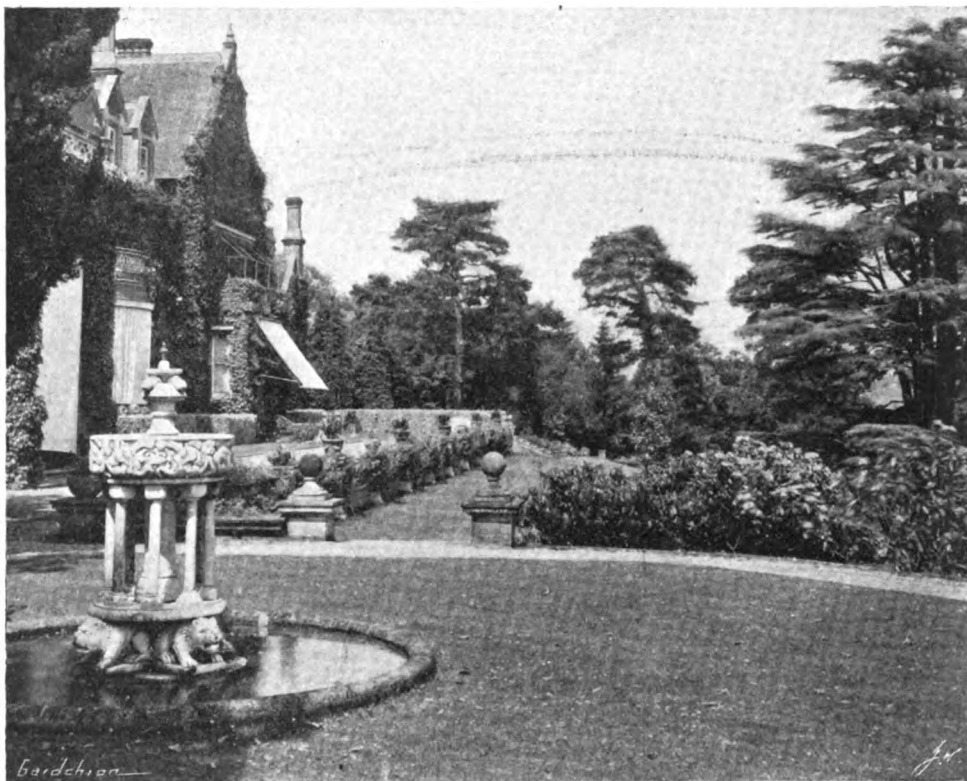


FIG. 58.—TONGSWOOD, KENT, THE RESIDENCE OF MR. C. E. GUNTHER, SHOWING THE GARDEN FRONT.

ous other gardens known to the writer, the Bearded *Irises* have not flowered well this year. I was pleased to see one of my favourites, the old *Clematis recta*, flowering freely, making a pretty display with its small white blooms; *C. heracleaefolia* also thrives in this garden. *Veronicas*, *Eryngiums*, *Aconitums*, and a number of other border flowers unite to form one of the best collections of hardy flowers it has been my privilege to see.

The walls behind the borders are well-covered with shrubs and fruit trees and supply a good background to the bright flowers.

In a low wall garden there are also numbers of suitable plants, including *Spring Phloxes*, *Helianthemums* and numerous other subjects, but as use had to be made of an old wall with an unsuitable backing, considerable difficulty has been experienced in establishing the plants. But the whole garden is replete with brightness and beauty, and it shows that both Mr. and Mrs. Ralston are keen flower-lovers. Much credit is also due to their gardener, Mr. Harris, who is full of enthusiasm for the gardens under his charge and all that it contains. *S. Arnott*.

bright colours, in company with the more permanent tints provided by the rich foliage of Japanese Maples, coloured Conifers, and variegated forest trees.

My special purpose in visiting Tongswood was to see the rock garden, which was constructed by Messrs. Backhouse in 1911. No fewer than two thousand tons of Sussex sandstone were employed in the making of this beautiful rock garden, and some of the stones are of exceptional size. It is situated near the south end of the mansion on rising ground, and the builders have lived up to their reputation as skilful craftsmen in this particular and interesting phase of gardening.

At the time of my visit, about the second week in June, the rockery was full of interesting plants in flower, notwithstanding that a whole host of subjects were already over, for the district is very early. The illustration in Fig. 56 shows some of the clumps of alpine plants in flower, and it affords an idea of the large size of some of the stones. At the top of the biggest stone, near the centre of the picture, is a mass of

Leptospermum grandiflorum in full bloom, and towards the left of this plant are generous clumps of *Helianthemum*, which at the time of my visit were covering the stones with patches of the beautiful colours in which the members of this genus are so rich. The rock garden has been designed to offer as much variety as possible, and in the forefront some of the stones are arranged as big outcrops, and others, placed irregularly as steps, lead to crags above, and down again into dells, and along a winding valley past a very natural-looking cave up to the higher parts again. The summit is well furnished with beautiful plants; clumps of *Olearia stellulata* with *Libertia formosa* in front make a grand picture, and on another of the highest spots *Leptospermums* are associated with *Phlomis fruticosa*. In one of the dells, where the rocks shade from the direct rays of the sun, a colony of *Ramondias* grows vertically from the rocks. The plants were some of the finest I have seen of this beautiful alpine, and although the type plants were the most vigorous, rose and white-flowered forms were also doing well.

Each step through this interesting rockery reveals some new subject. In one spot is growing a great colony of *Orehis foliosa*, studded all over with flower spikes, and both plants and flowers are of exceptional vigour. Other plants that call for special notice are *Roseoea cautioides*, its hooded primrose flowers suggesting a small *Gladiolus*, for it grows some two-and-a-half feet high. This is a most beautiful plant in flower and at Tongswood it propagates itself naturally by means of self-sown seedlings. The mauve-blue, white-centred *Scutellaria Brittonii* was very free in flower, and a mass of this plant was very pleasing; *Lithospermum Heavenly Blue* was almost over, but the great patches of this trailer must have been a grand sight earlier in the season; *Campanula garganica* was creeping up some of the stones and making great daubs of blue quite as fine as those of the *Lithospermum*; *Helianthemum venustum plenum*, associated with *Saxifraga pyramidalis*, was especially pleasing, and another very handsome plant in flower was *Linum salsoloides minor*, whose blooms are white with grey pencillings; plants of *Onosma alba rosea* were covered with flowers, and on one of the points of the rockery a colony of *Erigeron multiradiatus* was making a gorgeous display. A *Dianthus* that attracted my special notice proved to be *Bees' Scarlet*; this variety is of exceptionally rich colour, and worthy of a place in all rock-gardens. *Dianthus Old Rose* is another very fine alpine Pink. The deep mauve *Campanula speciosa* was very showy with its profusion of flowers, and another fine plant was seen in *Veronica pyrolaeformis*.

Primulas of almost all kinds are to be found in this rockery, and seedlings of *P. Bulleyana* are especially abundant. In the damper spots hardy Ferns of all types and variety grow in crevices and nooks, and the varied tones of green the graceful fronds afford, together with the cool effect they produce, make them as interesting as the most showy of flowering plants. The more open parts, where opportunity has afforded, have been planted with shrubby subjects, such as dwarf *Rhododendrons*, *Berberidopsis corallina*, which grows most luxuriantly and flowers splendidly; *Carmichaelia Enysii*, a dwarf, Heath-like member of the *Leguminosae*; *Senecio Greyii*, of which there is a fine clump near the centre of the rockery, and *Daphne Cneorum*, which hangs down over the rocks in big patches and almost hides its foliage with flowers.

No account of this rockery would be complete without reference to a most imposing patch of *Androsace lanuginosa* on one of the outcrops, with *Silene alpestris* fl. pl. just below it, the latter sweeping down between the stones as though it were a cascade of falling flowers.

But the rockery is only one feature of these interesting gardens. Broad herbaceous

borders on the lawns are filled with a variety of hardy perennial flowers, and in order not to obscure the view over the park, the plants are restricted to subjects not more than four feet to five feet in height. Even at the time of my visit *Phloxes* were already in bloom, and Spanish and English *Irises*, *Incarvillea Delavayi*, and *Larkspurs* were flowering in association, making a very pretty spectacle. An exception to the dwarfier plants was seen in *Verbascum Blattaria dinnax alba*, whose faintly blush flowers have a purple centre; this plant is very similar in growth to *Campanula pyramidalis*. *Aquilegias*, *Sidalcea Rosy Gem*, *Anchusas Opal* and *Dropmore*, *Erigerons*, *Alstroemeria aurantiaca*, *A. chilensis*, a fine form of the Red Valerian; *Shasta Daisies*, *Geum Yellow Queen*, and *Pyrethrums* of all sorts were contributing to the floral display in these borders.

There are two other very handsome herbaceous borders forming a small garden enclosed by a Yew hedge. A peep through the archway by which this garden is entered is shown in Fig. 57. The view extends right beyond the estate into the weald of Kent.

The Conifer near the arch is at the foot of a bank which rises to the higher part on which the rock garden is situated; the bank is planted with *Erica mediterranea* and *E. codonodes*, interspersed with large patches of the golden *Spartium junceum*, and in the foreground room has been found for the double-flowered *Erigeron Merstham Glory*, *Glaucium tricolor*, *Geranium grandiflorum*, and other hardy plants.

Next to the Yew-enclosed garden is a Rose garden and a big border of *Michaelmas Daisies*. Quite close to this part are the kitchen and vegetable gardens and glass-houses.

The kitchen garden is laid out very attractively, for borders by the main paths are filled with *Begonias*, *Pelargoniums*, and other summer bedding plants, the flower border being divided from the kitchen crops by a screen of *Roses* running the entire length of the garden. About the middle of the path there is a fountain, where another broad path crosses at right angles, and along this is a border of *Antirrhinums*, the many thousands of these plants creating a gay scene through the greater part of the season. All the kitchen garden crops are in the finest possible condition. The houses include two show houses, one filled with *Begonias* and *Pelargoniums* and the other furnished with *Schizanthuses*, *Clarkias*, and *Calceolarias*, all of which subjects are extremely well cultivated. A house is devoted especially to *Carnations*, and there are the usual *vineries*, *Melon*, *Cucumber houses*, etc.

A sub-tropical garden made by Mr. Gunther in a part of the natural woodland is as interesting a feature as any at Tongswood, and those who are interested in rare and difficult plants would be surprised to find how well many reputedly tender things succeed in this sheltered clearing. The illustration reproduced in Fig. 59 gives a view in this sub-tropical garden, but only a very small portion. It will be seen that *Bamboos* flourish luxuriantly, and on the bank in the distance are growing *Tree Ferns*, *Camellias*, *Yuccas*, and hardy *Palms*, *Trachycarpus excelsa*, which are the finest specimens I have seen out-of-doors in this country, except in the west, and many other semi-hardy plants.

By the winding path leading to the sub-tropical garden *Himalayan Rhododendrons* have been planted in association with *Bamboos* and *Kalmias*, and in other favoured spots tender and choice *Rhododendrons*, including *R. Fordii*, *R. Falconeri*, *R. campylocarpum*, *R. Shilsonii*, *R. campanulatum*, *R. superbum*, *R. kewensis*, *R. Countess of Haddington*, *R. Elizabethii*, *R. Albertii*, *R. pentamerum*, and *R. myrtifolia*.

At the bottom parts of the sub-tropical garden where the ground is moist, bog-loving *Primulas* have been planted, together with

such subjects as *Rodgersia tabularis*, *R. aesculifolia*, *Gunnera scabra*, *Iris sibirica* *Snow Queen*, a much finer plant than *I. alba*; and *Gentiana asclepiadea*. The plant of *Rodgersia aesculifolia* was carrying fourteen flower spikes of sweetly fragrant, *Saxifraga*-like blooms, while the foliage, as the name implies, is like that of the Horse Chestnut—a most glorious plant. A collection of rare flowering shrubs include some grand specimens of *Crinodendron Hookeri*, which at the time of my visit were covered with blossom; fine plants of *Drymis Winteri* and *Viburnum plicatum*, the last also finely in bloom.

These are a few of the features of Mr. Gunther's interesting gardens, where everything seems to flourish under the care of the gardener, Mr. Harcastle, who is to be congratulated on the fine condition and smart appearance of the place. G. F. T.

GARDENING IN INDIA.

In India there is an increasing demand at the present time for trained gardeners and garden superintendents, scientifically trained men who can make gardens look well and pay handsomely. The Indian gardener or *Mālee* proper is an unskilled labourer, who has picked up some smattering in garden knowledge, but who has not the energy or the ability to do much alone, or, in short, has no initiative.

The comparatively high wages obtained by unskilled labour in industrial concerns in India, have attracted many who otherwise would have turned to garden work. The result is that *Mālees'* wages have improved, but the standard of their attainments remain unaltered.

In a big garden, expert guidance is needed, hence the demand for trained gardeners, and training. The continued impact of the garden-loving outside world has doubtless had something to do with the revival of the ancient and honourable desire to improve the gardens of India. Europeans and Indians take a keen interest in their gardens, and of this there are many manifestations, especially in Indian garden literature, and the number of horticultural societies which have been formed.

There is a steady increase in the amount of seeds and plants sold in the country, and in most large towns there are several firms who do a profitable business in these commodities, including the famous firm of Messrs. Sutton and Sons, who have established a branch in Calcutta.

The seeds sold are nearly all imported after having been tested and treated in highly-heated chambers, which leads one to state that there are great possibilities in seed production in India on a large scale, and also by bringing into cultivation and production new races of wild plants indigenous to the country.

Western ideas of gardening and garden design appeal to the Indian more than those of the old Great Moguls because of their peaceful and natural effect. The town planning idea introduced by our western architects has brought with it the idea of gardens, and cultivation on a large scale with relation to roads and dwellings, and has resulted in the artistic laying-out of newly planned areas for the accommodation of growing populations. But, exactly as is necessary at home, the basis of horticulture in India should be love and understanding of plants, and the ability to do garden work one's self; every owner of a garden should be his own head gardener to be able to enjoy it fully. It is useless to give only general orders to a *Mālee*; special directions are necessary as to how a job should be done, or disappointment follows. Gardening is the *Mālee's* vocation, but he has no enthusiasm for it, neither will angry words or abuse create it. The interest he takes in his work is always just in proportion to the interest he sees taken in it by his master. George Burrows, *Garden Architect to H.H. the Maharajah of Patiala*.

PUBLIC PARKS AND GARDENS.

SEDLESCOMBE PARISH COUNCIL proposes to take up a loan of £400 from the East Sussex County Council for the purchase of a recreation ground.

THE accounts of the Glasgow City Parks Departments for the year ending May 31 show a revenue of £311,367 as compared with £306,623 in the previous twelve months, an increase of £4,743, while the expenditure amounted to £308,186 against £284,125, an increase of £24,061. The sum to be applied in reduction of suspense expenditure amounts to £3,180. On the revenue side £35,957 was derived from rent, grazing and sundries, and £18,552 from bowling greens, golf courses, tennis courts and other games in the parks.

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. 111-116).
(Continued from p. 135).

ENGLAND, N.E.

NORTHUMBERLAND.—Unfavourable weather prevailed when the trees were in bloom. Blossom was plentiful on Apple and Plum trees, but with the exception of a few varieties of Apples the fruits failed to set, the weather being wet and cold when the flowers were expanded. Small fruits, although affected by the drought, are remarkably good. Black Currants, Raspberries and Strawberries are all good. The soil is on a gravelly sub-soil, and has a good texture. *James Winder, Howden Dene Gardens, Corbridge-on-Tyne.*

resting on a layer of clay with a sandy sub-soil. *Jas. E. Hathaway, Baldersby Park Gardens, Thirsk.*

—Early in the season the general promise of bountiful fruit crops was good. With the exception of Pears all other fruit trees carried an enormous quantity of blossom, but, excepting in the case of small fruits, the flowers failed to set, although the weather at the time was fairly satisfactory. I consider the cause of the failure to be due entirely to the absence of sun during last summer. All fruit trees at the present time are looking very healthy. A number of Apples trees had leaf-scorch rather badly a few weeks ago, but they appear to have grown out of it. The rainfall measured in these gardens from May 30th to July 23rd totalled only 0.47 inch. The soil is a good loam resting on clay with a base of chalk. *J. S. Coates, Dalton Hall Gardens, Beverley.*



FIG. 59.—THE SUB-TROPICAL GARDEN AT TONGSWOOD.

(See p. 152).

On the expenditure side of the accounts the upkeep of public parks amounted to £135,162, children's playgrounds, £13,757; music, £14,444; bowling, golf, tennis, etc., £19,010, and upkeep of art galleries, £20,831. Debt charges run to £69,021. The total assets of the Parks Department are estimated at £1,779,670 and the liabilities at £1,027,892, leaving a surplus of assets valued at £751,778. The statutory rating power, which is 7d. per £, was exercised in the past year to the extent of 5.61d.

THE Parish Council of Rustington has been authorised by the West Sussex County Council to spend £1,200 on the provision of a recreation ground.

SALFORD CORPORATION is recommended to purchase eighty acres of land on the river side of Littleton Road, Pendleton, for a public park.

YORKSHIRE.—The fruit crops are very disappointing. Apples are very light, Pears also are very few, and there are no Plums. There was an abundance of fruit blossom, but owing to the cold nights and frost in May, the young fruits dropped. Gooseberries, Raspberries, and Red Currants, Black Currants and Strawberries, are all good average crops. Sweet Cherries are about an average yield, but the crop of Morello Cherries is very much under the normal. Fruit trees generally are very clean, but at the time of writing we have had no rain for seven weeks. *E. Knowles, The Hagg Gardens, Mirfield.*

—After a promising outlook, the fruit season is one of the worst. There was an abundance of blossom but it was spoiled by excessive rains, and the crops generally are very light. Doubtless, the wet, sunless autumn of 1924 had a good deal to do with the failure of the fruit crops as much of the blossom was weak and deformed. The soil is a good heavy loam

—In some cases Apples on cordons this year are above the average both as regards quality and crop, but Pears and Plums are almost failures in all forms of trees. The Victoria Plum is largely grown in this part of Yorkshire, but I have not seen a good set of it anywhere. This year, at Skidby, on the Yorkshire Wolds, there is a garden facing south, about two hundred and fifty feet above sea level and on a chalk sub-soil. Here the set of Victoria Plum is nearly an average one, but the fruits are small. The best cropped fruit with me are Irish Peach and James Grieve Apples. Suburban gardens in the City of Hull are all in low-lying ground which characterises "Holderness" and are only a few feet above the sea-level. The soil is heavy, on a clay sub-soil of considerable depth. Nevertheless these gardens produce in favourable seasons excellent crops of Apples, Pears, and Plums, while of the smaller fruits, Black Currants, Raspberries, and Loganberries do particularly well. *W. H. Bolton, 8, Ash Grove, Beverley Road, Hull.*

—The bearing wood of fruit trees was very soft owing to the moist winter of 1924. There was a good show of bloom in spring, but most of the flowers dropped from the above cause, and many were not fertile, hence we have small crops. The Strawberry season was short locally, owing to prolonged dry weather and great heat. The Apple crop varies considerably, but is mostly under the average. *T. G. Wilson, Newmillerdam, Wakefield.*

ENGLAND, E.

CAMBRIDGESHIRE.—The Pear and Plum crops, after a good promise, have failed, owing to cold winds and frosts in spring. Strawberries on heavy soils were very good, the fruit being large and abundant, but owing to drought, the season was short. Apples are beginning to drop as the result of insect pests and drought, but a good crop of clean and large fruit is still left. *Arthur Sewell, 42, Barton Road, Fly.*

ESSEX.—The fruit season of 1925 will be a memorable one. The prolonged drought which set in in early June has been disastrous to many crops. It is difficult to state if the drought is altogether responsible for the thin crops of Apples, Pears and Plums. At the flowering period the promise of abundant crops all round was marked. Plums and Pears are complete failures. Certain varieties of Apples, viz., Lane's Prince Albert, Bismark, More de Menage, Cox's Orange Pippin, and one or two others are carrying fair crops, but many varieties have not a single fruit. Raspberry Lloyd George has been a marvel, and still goes on fruiting despite the drought. Black, Red and White Currants have also been abundant. The soil here is a strong clay. *Arthur Bullock, Copped Hall Gardens, Epping.*

—The fruit crops are rather disappointing. There was an abundance of blossom on all fruit trees excepting Pears. The Apple crop suffered severely from sawfly attacks and Plums also are a very thin crop with the exception of the variety Monarch. Pears are a total failure. Strawberries were soon over owing to drought. Much of our soil is heavy, but the tendency is to grow fruit on rather light and easily worked land. This is specially true of dessert Apples. *C. Wakely, East Anglian Institute, Chelmsford.*

HUNTINGDONSHIRE.—With the exception of Doyenné du Comice and Beurré Hardy, Pears as well as Quince, are total failures. Plums and Peach trees were covered with blossom, but the crops of these fruits are the lightest we have had in these gardens for many years. All bush fruits bore abundantly, especially Raspberries, which were of excellent flavour. Apples are well under the average, but at the time of writing the fruits are clean and of good quality. *Guy S. Aubertin, Conington Castle Gardens, Peterborough.*

—Plum and Pear trees flowered very freely and the fruits appeared to set well, but the small fruits soon dropped from most varieties. The Czar Plum and Pitmaston Duchess Pear are carrying fair crops. Apples are a good average crop generally, and have a healthy look. Currants and Gooseberries have cropped heavily but the shallower rooting Strawberries and Raspberries suffered from the drought and the season for these latter fruits was quickly over. Frosts from the 8th to the 13th of March killed most of the Apricot blossom, and only the latest flowers formed fruits. There has been very little aphid or caterpillar but Pear midge and Apple and Pear scab seem to be on the increase in this district. *A. V. Coombe, Ramsey Abbey Gardens.*

NORFOLK.—Apples are satisfactory; old standard trees are carrying good crops. Pear trees have practically no fruits; the latter carried good crops in 1924. Plums are poor although the trees flowered well, but cold easterly winds with frost at night in spring, and the sudden change of winter into summer brought many of the fruits down before stoning time. Apples on Paradise stocks have been well-watered. Our soil is very light in texture, with a non-binding gravel subsoil. *Isaiah Johnson, Catton House Gardens, Norwich.*

(To be continued.)

NURSERY NOTES.

MESSRS. ROBERT BOLTON AND SONS,
HALSTEAD, ESSEX.

On page 62 of *The Gardeners' Chronicle* there is published a richly-deserved appreciation, with portrait, of the splendidly successful efforts of Mr. Robert Bolton to improve the race of modern Sweet Peas. Unless my memory serves me falsely, it brings vividly to my mind a visit on a Sweet Pea expedition round about a score of years ago, one of numerous such on identical intent, namely, to further the cult of the most delightful hardy annual known to culture—the Sweet Pea. In the earlier days, Mr. Charles H. Curtis and I caused a good deal of perplexity. Friends of those days meeting us continually were concerned to know which would be playing the rôle of "*fidus Achates*" the next time, and their perplexity was never dissipated until contact happened. It had, however, the end sought—the National Sweet Pea Society was established on absolutely sound foundations.

In those now rather remote times Mr. Bolton's headquarters were located on rocky slopes on the outskirts of Camforth, in the far north of England, where locomotion was not merely nerve-shaking to any save so hardy and seasoned a hill climber as he, but fascinating withal in the many beauties of magnificent mountain and valley scenery. This Lancastrian may lay sound claim to having been a pioneer of the N.S.P.S. in the dual sense of being one of its first members, and one of the most consistently successful raisers of the now universally admired and grown Spencer or waved-standard group. No claim is laid to the honour of having taught Mr. Bolton how to grow Sweet Peas; he knew more about that matter, and showing them, than this end of the erstwhile expeditionary force knew then or has known since. We desired his prestige and practical support, and we secured both in no small measure, along with a friendship which has proceeded without intermission since, even through days of somewhat sharp differences and doubtless heated arguments.

To-day, the friend, or interested stranger, who desires to pay this great specialist a personal call must go to wholly different scenes. The district is so far flat that no more than an apologetic hill rises as an obstacle before the traveller. Nevertheless, the fields of Essex have their multifarious interests to the man or woman who finds his life in the land and plants. On the respective farms at Birdbrook and Baythornend, with the former as the chief establishment, both near Halstead, and on excellent roads, will be found nothing beyond Sweet Peas and a quiet, yet unmistakably sincere welcome from the two senior members of the family, and no whit less so from Mr. Tom and Miss Bolton. My visit was on July 2nd.

There are some acres with no cultivated plant of any other kind in sight. The Sweet Peas are in very large structures of glass and equally large protective erections of skeleton lights, securely lashed together to guard against disasters in these days of well nigh prohibitively expensive glass. There are plants from autumn and spring sown seeds in different batches, and the results are intended to operate in two widely varying directions. In the first place there are flowers over an exceptionally long season for the exhibitions, to the principle of which Mr. Bolton, Mrs. Bolton, and Mr. Tom pay assiduous attention, and at which superb groups are arranged. It is herein that are seen the strikingly distinct and richly-hued novelties for which the firm is so justly famous.

A rumour of three varieties of more than ordinary brilliancy reached me, and reminded me that Birdbrook was within measurable distance of my home. An invitation followed; and it was to the effect that if the trip was made at once, five new sorts which were notable in several respects should be shown me, with a few of his older novelties, whose outstanding merits remain. Of such as Valentine, Tangerine

Improved, Wonderful, Royal Scot, the enormous Picture, Hawlmark Pink Improved, Colne Valley, Bolton, Wembley, Mammoth, Empire and Supreme, no mention need be made individually; their charms have long been recognised, but there are five additions that are coming to be familiar to visitors at shows, but not to stay-at-homes, and they deserve more than passing notice.

The first of these is Gold Crest. This has a large blossom of perfect form, whose colour is an exquisitely soft salmon, overlaid with something warmer, and a golden sheen. It is a beauty that will find a very wide welcome with the ladies immediately it is seen. The hue of Peggy is the richest cerise. Royal Pink is as expressively named as any Sweet Pea in cultivation, and one is, consequently, saved anxiety in manufacturing an appropriate description. Ivory Picture can be disposed of summarily and comparatively easily by saying that it is an ivory, delicately-tinted counterpart to its great prototype. Finally, there is Black Bess, which is positively indescribable beyond saying that in the lines, both in the houses and shelters, as well as in far longer serried rows out-of-doors for seeds, it has a black appearance. This quaint distinctness will appeal to some tastes, whereas its marked funereal quality will certainly repel those who look for brightness alone among the flowers.

One cannot be surprised at the reliability of the Birdbrook seeds when one sees the plants in flower in their splendid ranks. Each is as true to type as it is possible for assiduous attention to keep it, and there is no single unit of the united family quartet who is not most jealous of the reputation that Mr. Bolton has built up at the expense of time, thought, and quietly concentrated intelligence. *H. J. W.*

VEGETABLE GARDEN.

BORECOLE OR KALE.

(BRASSICA OLERACEA ACEPHALA, D.C.).

THE vegetable garden offers few more interesting and attractive subjects for study than are presented by the Borecole or Kale. The form of the leafage, which is the part of special interest to the consumer, is of elegant and varied character, while the colours of the same are always pleasing and often beautiful. This vegetable combines the elegant and useful in a high degree, and is sufficiently varied to suit every taste. In spite of the gay colours of some of its members it is not a fair-weather friend, that fails men in their hour of need, indeed, its edible qualities are vastly improved by the rigours of winter that send other and more pretentious vegetables to the manure heap. It is easy of culture, and readily adapts itself to the garden of peer or peasant; and, numerically, it is one of the most important members of the Brassica family.

Some varieties of the Borecole have been in cultivation for more than two thousand years. Theophrastus, 350 B.C.; Pliny, A.D. 72, and other ancient writers were attracted by the varied forms of this vegetable, and extolled their virtues; some few facts relating to their origin and development may be of interest. The records of the early history of the Borecole are rather obscure and often rather confusing; the facts, and the remarks based upon them, which follow, are therefore offered in good faith but with considerable diffidence.

In the *Herbal* of Dodonæus—1618 edition with Bijvoetsel, or supplement, compiled by the best authorities, which follows each chapter, considerable space is devoted to Brassicas, and illustrations of ten varieties are given, of which two are reproduced in Figs. 60 and 61; with their Brabant names appended. Respecting the one shown in Fig. 60, Dodonæus states, "This is now known in this land (Brabant) as Geconckelde Koole, in Latin *Brassica crispa*, in English wrinkled or ruffled Cole." That is the first variety of Koolen named by Theophrastus B.C. circa 350, in Greek, Oulo-

phylon; Cato B. C. 200, named it in Latin *Brassica secunda*, and Pliny A.D. 70 in Book 20 cap. 9 named it *Brassica Sabellica*, after a territory east of Rome occupied by the Sabelli, "whose knowledge of herbs was very great." Lyte's translation, 1578, states "This kind of Red Cole is called *Brassica Sabellica*, and of such as write in these days, *Brassica crispa*, in high Dutch, Krauser Kolt." In the supplement (Bijvoegsel) we read that Matthew Lobel, 1576, is said to have named the *Gecronkelde Kale* *Brassica fimbriata*, a very appropriate name. It appears from this that the Curled Kale was known in Britain at this time, as Lobel was Physician, and Botanist to King James I.

The second variety illustrated (Fig. 61), is the *Gehackelde Koole*, a kind with incised

The Borecole, C.B.P. 111. *Brassica virescens*, Green Borecole, Boerh, Ind. 2-12. *Brassica Siberica*, Siberian Borecole called by some Scotch Kale, and states "The Common Cole-wort or Dorsetshire Kale is now almost lost near London, where the Markets are usually supplied with Cabbage plants instead." Siberian is so entirely distinct from Scotch Kale in plant and seed that no one acquainted with both varieties could easily confound them.

In 1793 John Mason catalogued Green Kale, Purple Kale, and Chou de Milan, q.v. and in 1836. Lawson's *Manual* mentions common plain-leaved or Scotch Kale: purple coloured and nearly lost now, and Green and Red or Purple Tall German Greens, adding "there are other sorts which are much dwarfier and considered finer in quality."

At this point I may well pass from the purely historical aspect of the Borecole and briefly consider its origin. As the name indicates, it is a variety of *Brassica oleracea*, a plant which is found on all the sea shores of Europe. But whilst this may be true of the oldest varieties, it is the fact that some of the more modern developments appear to be varieties of *Brassica Napus* known as *Colza* or *Winter Rape*, which is also a native plant. The most noteworthy of these are *Asparagus*, *Sutton's Favourite*, and *Ragged Jack*. Some authorities hold that the Buda with its many synonyms, and *Limpsfield Greens* (A.M., R.H.S.), which is apparently a slender form of the *Asparagus* type, producing a greater abundance of shoots, and hardier than the parent variety, should also be classed under the same heading. The fact that there is a purple variety of Buda militates against this theory, but the green Buda might easily be mistaken for a poor strain of *Asparagus*. There are more than fifty varieties of Borecole in commerce: it will suffice if I present a brief description of the more important, and as the Green Curled is the oldest known, and most popular section, it naturally comes first. There are several varieties of which Tall, Intermediate and Extra Dwarf are the principal. Of each of these there are sub-varieties each possessing some special merit, such as extreme hardiness or closeness of curl. The leaves are of a pale green colour much puckered and crested on the margin; the stems put forth a generous supply of succulent shoots early in the year which, after a frost, are tender and of an agreeable flavour. A German half-dwarf pale green variety named *Mosbach* with broad leaves, plain in the centre, with finely crested margins, has a very attractive appearance, but it lacks hardiness, and therefore is unsuitable for northern districts. The best varieties for British use are the Extra Dwarf Moss Curled, the *Victoria*, and A.I. of the intermediate type, and the Tall Moss Curled for large gardens and exposed situations.

There is a separate section known as *Hearting* or *Imperial* of which the plants form a heart in the centre of the crown which is highly esteemed; the leaves resemble those of the *Mosbach*.

There are purple coloured forms of the tall and extra dwarf curled which are equally hardy and as closely curled, but they are more popular on the Continent than in England.

As regards *Asparagus Kale*, considerable differences of opinion exist both in England and on the Continent, some holding it to be a rather large and palish green, smooth-leaved variety, with large white stems and midribs, adapted for the *Asparagus* treatment, which is said to have originated in the Wye Valley about the middle of last century, and of which some excellent examples were sent to Wisley; others hold it to be a more slender plant of darker green colour: while in *The*

Vegetable Garden (Vilmorin) it is described as *Jerusalem Green Curled* or *Asparagus*, with purple veins and leaf tips. The first named is certainly the best variety but, like all of this class, it is not very hardy.

Buda, Delaware, Labrador, Jerusalem, not to mention other names by which this variety is known, is an even more difficult subject to handle as there are two distinct varieties, one green, the other purple, to deal with. The purple form is a very old variety well-known throughout northern Europe; the strains are very variable in different countries. It is, therefore, hardly possible to fix a definite type, but the special strain of Labrador grown for many years by Mr. E. Beckett from seeds obtained from that country, is the best of the whole bunch in the opinion of the writer, both for quantity and quality of the produce. The

Gecronkelde Koole.



FIG. 60. GECRONKELDE KOOLE:
from the *Herbal* of Dodonaeus.

leaves which was named in Greco-Latin, *Brassica selinoides*. This was known to Dodoens as "*Brassica Apiana* or *Eppe Koole*, that is to say Cole with jagged leaves." "This variety was called by some *Plumkyens* (Feathered Koole) and Lobel is said to have named it *Brassica tenuifolia laciniata*." We learn from this that the fringed and the lacinated Kales are distinct developments, the nearest counterpart to the latter now existing being the French *Chou frisé lacinié*.

In 1719, Boerhabe mentions *Brassica fimbriata virescens*, the Green Borecole.

In 1754 William Drummond, Edinburgh, catalogued Boor Cole, Small Kail, Kilmaurs Kale and Russia Curled Kail. Of these Justice states "The Kilmaurs are the best of any after well-pincht with frost."

Miller (*Dictionary of Gardening*, seventh edition, 1759), quotes:—" *Brassica fimbriata*,

Gehackelde Koole.



FIG. 61. GEHACKELDE KOOLE:
from the *Herbal* of Dodonaeus.

green form of Buda is a dwarf and slender plant of the *Asparagus* type which the *Limpsfield Greens* will easily displace.

Jerusalem Kale is an even more hopeless case, for when one writer describes it on one page as *Jerusalem Green Curled* or *Asparagus*, and on another as *Jerusalem* or *Delaware*, it is better to let it rest. The most satisfactory sample of it at Wisley greatly resembled the *Asparagus* from the same source.

In addition to other less important garden varieties which it is not necessary to particularise, there are several Kales which are grown almost exclusively for cattle feeding, but which would be out of place here. In times of great scarcity these are very acceptable on the tables of the poor. The principal varieties are *Thousand-headed*, *Russell's Strain*, *Purple Flanders*, *Jersey Tree* and *Shepherd's*.

(To be concluded.)

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Cotoneaster thymaeifolia congesta.—Mr. Ralph E. Arnold describes this *Cotoneaster* as a remarkable variety of *C. thymaeifolia* (p. 49). This variety should be better known; I often had enquiries respecting the plant when in charge of a garden where it was grown in considerable numbers. It is a most useful low shrub for the rock garden, for it is slow of growth and very compact in habit. Neat little bushes and pyramids are formed without pruning. We used it in beds on a terrace surrounded by paved walks. The beds also contained plants of a *Moutan Paeony*, and they were planted with *Gladioli* for an autumn effect. Some difficulty was found in securing plants of this *Cotoneaster* from nurserymen. Specimens growing in pockets on the stone steps of the sunk garden were very interesting, but several of the plants failed in this position, and upon examination it was found that the soil about their roots had become sour owing to the drip of water down the steps. Efficient drainage was subsequently provided, and the plants grew and gave a pleasing effect at all seasons of the year. Specimens growing in beds will occasionally produce horizontal shoots which, if pegged down, will send out roots, and propagation may be effected by this means. The plant may also be raised from cuttings. *C. Ruse.*

Double-flowered Trollius.—Mr. Clarence Elliott's interesting description of a double *Globe Flower* found recently by him in the Mt. Cenis district (*Gard. Chron.*, August 8, p. 117), perhaps merits some comment by a botanist, even though it may be bordering on the hypocritical to do so. He describes the flower as bearing in the neighbourhood of sixty petals instead of the usual five or so. It is fairly obvious the term petals is here used in the loose sense to indicate the conspicuous part of the flower. Botanically, these perianth members are usually regarded as sepals. The petals, or honey leaves as they are sometimes called, are contained within, and consist of a number of small, narrow, spatulate bodies, orange in colour and honey-secreting. These are generally looked upon as transformed stamens—an interpretation applicable to the petals of the *Ranunculaceae* as a whole. Contrary to the general rule in *Dicotyledonous* flowers, the sepals in most genera of this family are brightly coloured, that is to say petaloid, though the genus *Ranunculus* itself is a prominent exception. One would like to know in the case of this handsome freak now in Mr. Elliott's possession, whether the increase in the sepals has been at the expense of the petals and stamens. In other words, did these abnormal flowers contain both petals and stamens, or have they been replaced wholly or partly by narrow sepals? As the plant looks like surviving its move from the Alps, an answer to this query will most likely be forthcoming next year when it flowers, even if the discoverer cannot supply the information off hand. It may be a mere slip on the part of Mr. Elliott to speak of the normal flower of *Trollius europaeus* as possessing usually five or so petals or rather sepals as he obviously means. I have never yet come across a flower of this species with so few sepals as five, and if such occur at all frequently it would be a matter of considerable interest to me. Several years ago I counted the sepals and petals of some flowers of *Trollius* gathered in two districts of Switzerland, viz: Davos and Saas, and on turning up my notes, glean the following particulars. The number of flowers counted in all was seventy-seven. The sepals varied from eight to sixteen with an average of about 11.5 per flower; and the petals from four to eighteen with an average of 9.5. The numerous sepals of *Trollius europaeus* I am inclined to hold as a primitive feature, preceding in the course of evolution the establishment of the definite five; but all botanists may not (as yet) be in agreement with this view. *J. Parkin, Blauwhuette, Wigton, Cumberland.*

SOCIETIES.

SCOTTISH NATIONAL SWEET PEA, ROSE AND CARNATION.

THE large St. Andrew's Hall, Glasgow, was unable to accommodate the record number of exhibits staged at the annual show of the above Society held on August 5 and 6, and for the first time in its history additional space had to be provided in two adjoining halls and also in the annexe at the entrance. There were 116 classes in the four competitive sections and the quality of the blooms was of a high standard notwithstanding the thunder and hail storms which swept over the eastern and northern districts a few days previously. An interesting incident in the arrangements was the association of Mr. David Burpee, Philadelphia, Mr. William Cuthbertson, Edinburgh, and Mr. Alexander Malcolm, Duns, as judges in the Sweet Pea section.

A new feature of the show was the collection of seedlings which had been under trial at Helensburgh. The judges had twice inspected the forty-five varieties in their growing stage at an interval of a fortnight and the final adjudication was made after seeing the cut blooms staged. The Society's Gold Medal was awarded to Magnet, cream pink, sent by Messrs. DOBBIE AND CO., with twenty-five-and-a-half points against twenty-five points credited to Messrs. E. W. KING AND CO.'S 2 L.O., which received a Silver Medal. Other awards were as follow:—First-Class Certificate to Mermaid and No. 42, lavenders, sent by Messrs. DOBBIE AND CO., Certificates of Merit to No. 56, pure orange, grown by Mr. J. STEVENSON, Wimborne, and No. 41, orange-scarlet, grown by Messrs. DOBBIE AND CO.

SWEET PEAS.—Messrs. TORRANCE AND HOPKINS, Busby, met with no opposition in the class for a collection arranged on a space of fifteen feet; they staged some fifty varieties which included meritorious examples of Tom Sykes, Lady Gay, Doreen, Youth, Lucifer, Fordhook Blue and Radiance.

Although the number of his successes came far short of last year's prize winning record, Mr. J. A. GRIGOR, Duff House, Banff, carried off the first prize for twenty-four vases with a creditable group. His best varieties were Fair Lady, Blue Beard, Daffodil, of deep cream colour, Hawmark Pink, Grenadier, Dignity, and Mauve Beauty. This enterprising competitor staged no fewer than 105 vases in the various classes and he was also successful with Guinea Gold, Blue Bird, Tom Sykes, Sunshine, Coralline and Pink Perfection in the class for novelties of 1925.

Mr. CHAS. GLASS, Broomhill Gardens, Cardross, excelled in the class for twelve vases, and in the Gardeners' section Mr. CHAS. STEWART, Moy Gardens, Forres, was successful with nine vases, which included particularly good specimens of Tangerine, Powerscourt, Comrade, and Royal Scot.

Competition in the amateur classes was keen and here the principal prize winners were Mr. GEORGE BULLINGALL (nine vases), Mr. JOHN PATERSON, Gargunnoch (six vases), and Mr. DAVID WRIGHT, Larbert (three vases).

The first prizes offered by Messrs. DOBBIE AND CO. and by Mr. J. STEVENSON, Wimborne, for introductions raised by these growers were won by Mr. JAMES TROUP, Row, and for the second year in succession he secured the leading place for eighteen vases in the classes open to all. The same exhibitor also carried off Mr. Woodcock's prize for one vase each of Austin Frederick, Pamela, and Cecily.

The increasing popularity of the single vase classes was reflected in the large entries, which ranged in number from ten to eighteen. The pink and cream-pink classes were exceptionally strong, and here Mr. GEORGE BULLINGALL excelled with vases of Edith and Picture and in the picotee-edged class he put up a vase of Youth, which was not only

first in its colour, but was awarded premier honours as the best vase in the show and the best of the 1924-25 varieties. He also excelled with a vase of Elegance in the competition for a variety of any other colour. Mr. JAMES SMITH obtained triple awards in the orange-scarlet class with Grenadier in the creams with Matchless and the salmon-pinks with Royal Sovereign. Other prize winners in this section were Mr. JOHN PATERSON, with Orange Perfection and Warrior, in the orange-pink and maroon colours; Mr. JAS. LOGAN with Unwin's Crimson; Mr. C. C. TURNER, Chryston, with Edna May; Mr. GEO. S. BLACKIE with Wembley, and Mr. J. NEAVES, Monkton, with Royal Purple.

There were five entries for the Burpee Cup which carries with it forty shillings in cash, for twelve vases distinct varieties. Some excellent Peas were shown in this class and the competition between Messrs. GEO. BULLINGALL, JAMES SMITH and J. A. GRIGOR was close. The latter was successful in 1924, but the former was particularly strong in his productions of Miss California, Wembley, Mammoth, Youth, Royal Sovereign and Elegance, and in the end they were placed in the order given.

ROSES.—Nurserymen were well represented in this section. Messrs. D. and W. CROLL, Dundee, were placed first for six baskets. Messrs. THOMAS SMITH AND SON, who were second, had no competitor in the class for twelve vases, and in addition to the first prize for twelve red Roses which was won with the old hybrid perpetual, Gloire de C. Guinoisseau, the Stranraer firm were placed third on five different occasions. Mr. SANDY DICKSON, Belfast, carried off the honours in the class for thirty-six blooms in which chief strength lay in the red sorts, the most notable varieties being Mrs. Lamplough, Manifesto, Arthur Cooke, Admiration, George Dickson, and J. G. Glassford. Messrs. ADAM AND CRAIGMILE were second and while the Roses were not so uniform in quality, the group contained a fine specimen of Mrs. F. Dennison, which was judged to be the best bloom in the Nurserymen's section. The same growers were placed first and third for six blooms of a seedling not in commerce. The winning variety was named Ferniclea, a pale yellow bloom flushed rose in the centre, which received a Gold Medal at the Aberdeen Show last year.

The second award went to Mr. SANDY DICKSON, who staged a pale pink seedling named John Hind, and the prize awarded to twelve blooms introduced since 1922 was also placed to the credit of this Irish competitor.

In the amateurs' and gardeners' section Mrs. RUSSELL MEARNS won the Dickson Cup offered for twenty-four blooms; Mr. WILLIAM SMITH, Dun Echt, Aberdeen, won the Lady Gardiner Rose Bowl with twelve high-class blooms, while the Turner Cup for amateurs was awarded to Mr. JOHN BROWN, Galston. A grand specimen of Madame Louise Crette, grown by Mr. JAMES KERR, Stewarton, was chosen as the best bloom shown by amateurs.

CARNATIONS.—The Carnation division consisted of 29 classes, and one of the side halls was set apart exclusively to the exhibits. The competition in the collection of border Carnations and Picotees, artistically arranged on a space occupying ten feet by four feet was restricted to Messrs. TORRANCE AND HOPKINS, and M. CAMPBELL AND SON, Blantyre, and the honours were allotted in that order. In the open and amateurs' divisions an interesting triangular contest took place in the border classes between Messrs. C. T. FYFE, Port Glasgow, a successful new competitor, JAMES SMITH, Darnel, and ALEX. McMILLAN, Cunnock. The first-named excelled in both classes of six vases, and he also wrested the Irving Valley Cup, hitherto held by his opponents. Mr. SMITH was placed second, and his record consisted of five first, four second, and two third prizes. Mr. McMILLAN scored with white ground fancy Carnations, selfs, and

fancies. Messrs. C. T. FARMER, Troon; H. B. MATHIESON, Gartmore, and A. T. HARRISON, Culzean Castle, were the most successful competitors in the classes for perpetual-flowering Carnations.

Owing to the limited accommodation, the trade exhibits were restricted both in number and size. Messrs. DOBBIE AND Co. were represented by an extensive collection of Sweet Peas and Roses. Messrs. AUSTIN AND McASLAN's exhibit was composed entirely of Roses, artistically arranged in baskets, and Messrs. GEORGE MAIR AND SONS, Prestwick, put up a choice display of seedling Gladioli.

STAFFORDSHIRE AND MIDLAND COUNTIES.

HELD at Burton-on-Trent on August 12 and 13, this show was in every respect an advance upon last year's excellent first attempt, and the organisers may be congratulated upon the rapid realisation of their avowed object of establishing a show which may rank among those of national importance. Interest is already widespread, for Rose exhibitors were gathered from Scotland, Ireland, Gloucester, Essex, and several other counties, and there were uncommonly good groups of flowering shrubs from Newry, Ireland, and Woodbridge, Suffolk, whilst Gloucestershire, Hampshire, Somerset and Lincoln were as prominently represented as Stafford, Derby, and Warwickshire. Mixed weather on the first day did not prevent a big attendance of visitors, whilst on the second day fine weather and an excellent sports programme attracted a huge crowd, and there can be no doubt the superb floral display gave horticulture a beneficent fillip in this populous industrial centre.

The big Rose tent was an exhibition in itself, and there was an exceedingly close contest for the Silver Challenge Bowl for the best group occupying one hundred super feet of staging. The victor was Mr. T. ROBINSON, Porchester Nurseries, Nottingham, who was very closely followed by Messrs. S. MCGREDY AND SON, Portadown, Ireland. Mr. ROBINSON's strong point was the clever arrangement of a large quantity of blooms to produce a grand effect without a vestige of overcrowding. Messrs. S. MCGREDY AND SONS' group contained some features of fine quality, but there were weaknesses here and there in the finished effect. The new brilliant variety Gwyneth Jones made a gorgeous corner column, and throughout the group the Pernetiana hybrids lit up the stand with glorious colour, but Mr. ROBINSON's utilization of every bit of space with material of uniform quality and freshness was a masterpiece of the showman's art. Mr. C. GREGORY, Old Close Nursery, Chilwell, followed very closely, and deservedly received a large gold medal for a group in which basket work revealed excellent artistic taste. Small gold medals in this class were awarded Messrs. ENGLISH AND Co., Gloucester, Mr. Wm. LOWE, Beeston, who rather overweighed their stand with big masses, Messrs. DOBBIE AND Co., Edinburgh, and Messrs. BARRON AND SON, Borrowash, the last firm being also exhibitors of a choice collection of herbaceous flowers.

An exhibit of unique character came from Mr. T. SMITH, Daisy Hill, Newry, Ireland, who received the large Silver Cup for the best exhibit in the show. Nearly two hundred distinct species or varieties of plants were represented on this stand, and although there was no great display of artistic skill in the arrangement, the rarity, beauty and engrossing interest of the whole collection left no doubt of the worthiness of the honour bestowed.

Leucodendron argenteum with its foliage of subtle tints coated with the finest silvery silken hairs, Calceolaria alba, with globular flowers and toothed, linear leaves, Ceratostigma Willmottiana, and Liriodendron tulipifera aurea marginata were a few choice subjects, and among many unique hybrid Berberis was one B. aristata-pruinosa with long trails of dark foliage and a profusion of large, white, oval berries. Erica cinerea rosea was conspicuous among many fine Heaths and Menziesia polifolia

alba was unusually fine. Astilbe simplicifolia and Primula capitata Mooreanus were two useful plants for moist positions among rocks, and the uncommon Crassula sarcocaulis represented sun-loving subjects, but a tithe of the interesting plants in this group cannot be detailed in restricted space.

Mr. R. C. NOTCUTT, Woodbridge, had a ground group of choice ornamental and flowering shrubs. Messrs. J. CYPHER AND SONS, Cheltenham, were the only exhibitors of stove and greenhouse plants. The groups of Carnations from Mr. C. ENGELMANN, Saffron Walden, afforded another example of masterly handling of good flowers, and Messrs. HEWITT AND Co., LTD., Solihull, Birmingham, made an imposing display of Gladioli which were grown to a high state of perfection. A large-flowered variety named Byron L. Smith is of a very distinct shade of rose-lilac, with a clean sulphur blotch in the throat. Red Emperor was bigger than ever—a very remarkable flower.

Phloxes were the feature of Messrs. RICH AND Co.'s exhibit from Bath. Aegir was one of the brightest scarlets, Iris, Josephine Gerbaux, Goliath and Elizabeth Campbell, being other distinct and good kinds.

Messrs. ISAAC HOUSE AND SON, Westbury-on-Trym, had their customary range of Scabiosa caucasica, and S. Columbaria. Dahlias from Mr. H. WOOLMAN, Shirley, Birmingham, were a grand lot. A new cactus-flowered variety named Ballet Girl was very striking, the centre being flushed with a bright lobster-red which ran off in stripes through the white ground of the outer petals.

Messrs. DOBBIE AND Co. staged many large and bright colerette Dahlias, dainty little pompons, (all very old favourites) and the intensely coloured Coltness Gem accompanied by hybrids of this class which at present have not given us anything of equal merit to the original.

Messrs. MAXWELL AND BEALE had an interesting collection of rock plants. Mr. Wm. SYDENHAM, Melbourne, Derbyshire, showed many good bedding Violas and a variety of herbaceous flowers. Messrs. EAMES AND SON, Peterborough, had a remarkably good Scabiosa caucasica among their hardy flowers; in fact it is one of the best forms of this variable but charming flower we have seen.

Floral art was demonstrated by Mr. ROLAND GOOD, Ashby-de-la-Zouch, Messrs. JOHNSON'S Burton-on-Trent, and by Mr. JOHN SHERRATT, whose novel idea of constructing an elaborate advertisement sign of Burton's chief industry, entirely with natural flowers, created something of a sensation. Mr. SHERRATT, by the way, is Organising Secretary of the show, and was highly complimented by all.

The following awards were made to non-competitive exhibits:—Silver Challenge Cup and Gold Medal to Mr. T. SMITH, Newry; Silver Rose Bowl and Gold Medal to Mr. T. ROBINSON, Nottingham; Large Gold Medals to Messrs. S. MCGREDY AND SON, Mr. C. GREGORY, Mr. C. ENGELMANN, Messrs. J. CYPHER AND SONS, Mr. J. SHERRATT, Mr. H. WOOLMAN, Mr. R. C. NOTCUTT, Messrs. BARRON AND SON, and Messrs. JOHNSON'S; Small Gold Medals to Mr. W. LOWE, Messrs. ENGLISH AND Co., Messrs. RICH AND Co., Messrs. DOBBIE AND Co. (two), Messrs. TOOGOOD AND SON, Messrs. HEWITT AND Co., LTD., Mr. ROWLAND GOOD, Messrs. ISAAC HOUSE AND SON, Messrs. MAXWELL AND BEALE, and Messrs. EAMES AND SON; Silver Medals to Mr. Wm. SYDENHAM, Messrs. JONES BROS, and Messrs. G. WILSDON AND SONS.

ROYAL HORTICULTURAL OF IRELAND.

THE three days' show of the Royal Horticultural Society of Ireland, held on the 5th, 6th and 7th inst. in conjunction with the Royal Dublin Society's Horse Show, at Ballsbridge, Dublin, was generally conceded to be one of the most successful of its kind over many years. The Silver-Gilt Medal presented to the Society by *The Gardeners' Chronicle* for the best amateur exhibit of rare plants or flowers was won by Miss WYNNE, Tigroney, Ovoca, Co. Wicklow, for a collection

of rare alpine, including species collected by herself in Switzerland. Trade exhibits, as usual, formed the principal feature of the show. Gold Medals were awarded to SIR JAMES W. MACKAY, LTD., Dublin, for a very artistically designed model garden, in which Antirrhinums were the floral feature; to Messrs. S. MCGREDY AND SON, the Royal Nurseries, Portadown, for Roses; to Messrs. ALEX. DICKSON ("Hawthorn"), LTD., Newtownards, for Roses and Sweet Peas; to Messrs. W. DRUMMOND AND SONS, LTD., Dublin and Stirling, for hardy flowering shrubs and plants including alpine; Silver Gilt Medals were awarded to Messrs. LAIRD AND DICKSON, Pinkhill Nurseries, Edinburgh, for alpine and rock plants. Awards of Merit were given to Codonopsis Meleagris and Sedum praegerianum; to Mr. S. GILTHORPE, the Nurseries, Monkstown, Co. Dublin, for Gladioli, and to MAJOR FRENCH, Rosemount, Booterstown, Co. Dublin, for vegetables comprising chiefly French varieties as grown under intensive culture.

THE DONARD NURSERY Co., Newcastle, Co. Down, won the President's Cup with a fine floor group of hardy subjects, and the Hon. A. E. GUINNESS, Glenmaroon, Co. Dublin, (gr. Mr. W. Stevens), won the first prize in Class 1, with a beautiful exhibit, including Crotons. In the champion class for vegetables Mr. W. Barrett, gardener to LORD ARDEE, Kilruddery, Bray, Co. Wicklow, won the first prize. Mr. W. H. LEE, Powerscourt Gardens, Co. Wicklow, excelled in the open class for a collection of Sweet Peas.

NORTHAMPTON MUNICIPAL HORTICULTURAL.

THE tenth annual show of this Society was held in Abington Park on the 5th and 6th inst. The show was a success in every respect, the exhibits being about the average in number, and the attendance of the general public was over twenty thousand. The quality of the produce staged was excellent.

The Wron Challenge Cup offered for the best group of Roses, was won by Mr. ELISHA HICKS, Mr. G. BURCH, Peterborough, being placed second.

Messrs. KING AND Co., Coggeshall, excelled with Sweet Peas. Perpetual flowering Carnations were best shown by Mr. C. ENGELMANN, Saffron Walden.

In the class for a group of flowering and foliage plants, two hundred square feet, the premier award was gained by Messrs. W. A. HOLMES, Chesterfield, who set up a characteristic group. Messrs. H. E. AND W. LACK, Wellingborough, were second.

Other awards in the open classes were as follow:—Decorated dinner table, first, Mr. ELISHA HICKS; second, Mr. W. A. HOLMES; Thirty-six Roses: first, Mr. ELISHA HICKS; second, Mr. G. BURCH, who also were first and second respectively in the classes for eighteen Roses and for twelve Roses. Sweet Peas: First, CAPT. R. B. BRASSEY (gr. Mr. Quin), Coltesbrooke Hall; second, Mrs. D. C. GUTHRIE, J.P. (gr. Mr. Burr), East Haddon; Mr. J. ADAMS, Kettering, won the first prize for a collection of hardy perennials, the DOWAGER LADY ANNALY (gr. Mr. D. Cam'ron), being second.

The leading prize winners in the fruit section were CAPT. BRASSEY, Mrs. D. C. GUTHRIE, Mr. J. H. MARLOW (gr. Mr. J. Pescue), and the DOWAGER LADY ANNALY. CAPT. BRASSEY was first for a collection of vegetables, Mr. C. KITCHENER, Olney, being a very close second.

One of the most successful amateur exhibitors was Mr. C. KITCHENER, Olney, who won *The Gardeners' Chronicle* Medal among other valuable awards.

Gold Medals were awarded to Messrs. ALLWOOD BROS., Wivelsfield, for Carnations and a Dianthus garden; to Messrs. I. HOUSE AND SON, Westbury, for Scabiosa; to Mr. J. G. WOOD, Ashstead, for a rock garden; to Messrs. DANIELS BROS., Norwich, for Gladioli and Phloxes and to Messrs. RAMBOTHAM AND Co., Bletchley, for Roses. A Silver Medal was awarded to Messrs. H. E. AND W. LACK, for cut flowers.

SHROPSHIRE HORTICULTURAL.

AUGUST 19 AND 20.—Shrewsbury Floral Fête—The annual show of the Shropshire Horticultural Society, was held in the Quarry on the above dates. The show was a fine one in every sense of the word, as it was extensive, finely arranged, and the competition was keen and the quality excellent. Once again it is a pleasurable duty to congratulate the committee and officers, including the hard-working secretary, Mr. W. E. Brazier, upon the success of the show. The group classes were especially fine and would of themselves have provided a show worth going a long way to see. Hardy flowers were superb, Roses were good, fruits were better than anticipated, the Grapes being particularly attractive; while table decorations, vegetables, and trade displays were other great attractions.

As usual there were additional attractions to the flower show, including some capital music, various open air performances and horse-leaping competitions.

GROUP CLASSES.

In the great open class for a group of flowering and foliage plants arranged for effect on a space of 300 sq. feet there were four competitors. Over a long series of years Messrs. JAS. CYPHER AND SONS, Cheltenham, have won the premier award of £45. but on this occasion Mr. W. A. HOLMES, Chesterfield, won the first prize with one of the finest displays we have ever seen him put up. His Codiaeums were wonderful in their grace and colouring as well as in their disposition, and each plant was a picture in itself. A big Kentia occupied the central position at the back and there were two smaller specimens at the corners. Codiaeums formed, as it were, the basic feature of the rest of the group and as a setting to these Mr. HOLMES had a ground-work of smaller Codiaeums, Ixoras, Nandina domestica, Filicia decipiens, Ferns, Rex Begonias, and a front line of small Dracaenas, Begonias, variegated Ficus and well-berried Nertera depressa. To lighten the whole and add further grace and colour Mr. HOLMES used Liliun Henryi, L. speciosum and L. s. album, L. auratum, Francoa ramosa, and a few Orchids. It was a great effort and Mr. HOLMES was heartily congratulated on his splendid success.

SIR G. H. KENRICK (gr. Mr. J. V. Macdonald), Whetstone, Edgbaston, Birmingham, was awarded second prize. He used tall Cocos flexuosus as a background, with two arches in front of them, each furnished with drooping Selaginellas, Rex Begonias, small Ixoras, and Codiaeums. As in the case of the previous group, Codiaeums were made a pleasing feature, but among these the graceful spikes of Francoa ramosa rose above and arched over the Dracaenas, Caladiums, and Ixoras, which formed the ground-work of a fine display. Gesneras, Dendrobiums, Epidendrums, Brassias, Ixoras, and Tillandsias provided floral colouring towards the front. Third prize was awarded to Messrs. JAS. CYPHER AND SONS, who had a very elegant exhibit that was a trifle weak and flat in the background, while beautiful Orchids were grouped rather too closely together in the foreground. Humea elegans, Liliuns, and Odiaeums were all admirable, and it may be stated that Messrs. Cypher and Sons lost not so much because of any weakness on their part as by reason of the super-excellence of their competitors, and this is the highest praise we can give to this splendid class. The fourth prize was won by Mr. W. MANNING, Dudley, who also used Codiaeums freely, but this group was rather dull, and the arrangement somewhat heavy as compared with the other groups.

The same four competitors came forward in the class for a group of foliage plants arranged on a space of 250 square feet, and here Messrs. J. CYPHER AND SONS won the first prize with a beautiful exhibit in which Codiaeums were the leading feature,

although some brilliant specimens of Nandina domestica deserve special mention. There was nothing to cavil at in this group either in the matter of grace or colour. Mr. W. A. HOLMES obtained second prize, but here his fine Codiaeums proved his undoing, as he had used too many of them, with the result that his display erred on the side of heaviness. Sir G. H. KENRICK secured third prize with a group containing beautifully coloured Selaginella caesia and Acalyphas; Mr. ED. MANNING, fourth.

In the county class for a group of plants A. M. BARBER, Esq. (gr. Mr. T. A. Bremner), Wellington, was chief prize-winner, followed by Mr. H. HOWELLS, Belle Vue. The last named exhibitor had the best three specimen Pelargoniums; C. E. WACE Esq. (gr. Mr. H. Clift), College Hill, was second, and Mr. H. CLIFFE, Bishops Street, Shrewsbury, third. A. M. BARBER, Esq., led for tuberous-rooted Begonias with freely flowered, large specimens; A. E. PULLIN, Esq. (gr. Mr. Caswell), The Mount, second.

HARDY FLOWERS.

The four magnificent groups in the class for a collection of hardy flowers arranged on a space of 250 square feet, provided a great blaze of colour, indeed this class was one of the great features of the show.

Messrs. GUNN AND SONS, Olton, won first prize with a superb display in which colour, variety, and arrangement were alike excellent. The Hollyhocks were splendid and set up in three great sheaves along the back, and in four smaller sheaves towards the front. A low ground-work of Phloxes, Gaillardias, Erigerons, etc., was so disposed that while nothing appeared crowded, the taller subjects, such as Liliun speciosum, L. album, L. auratum, Kniphofia grandiflora, Rudbeckia Golden Glow, R. maxima, Gladioli in variety, Montbretias, Scabious, Chelone barbata, and other fine things, showed up to advantage.

Second prize was won by Messrs. BEES, LTD., who also had a grand exhibit in which Hollyhocks, Liliun auratum, L. tigrinum splendens, L. Henryi, L. speciosum, Kniphofias, and Gladioli were of very fine quality and staged advantageously. For colour this group was ahead of the premier display, but it lacked something of grace. Messrs. M. PRICHARD AND SON, Christchurch, secured the third prize with a brilliant group in which Kniphofias and Crinum Powellii were fine features. In this display the groundwork of flowers was particularly elegant, while the front line of Erica Allportii and E. Hammondii, and a close-cropped grass verge was a capital idea. Messrs. HARKNESS AND SONS, Bedale, were fourth, and Messrs. GIBSON AND CO., fifth.

Messrs. BEES, LTD., staged the best collection of Lilies and other bulbous flowers, and showed a fine lot of L. speciosum, L. tigrinum, L. Henryi, Galtonia candicans, Montbretias, Gladioli, and Crinum Powellii; second, Messrs. M. PRICHARD AND SONS, with a two-feet arrangement of Montbretias and Gladioli.

The best eighteen bunches of hardy flowers were shown by Messrs. BEES, LTD., whose bold exhibit included fine examples of Liliun speciosum, L. Henryi, L. tigrinum, Galtonia candicans, Gladioli, Phloxes, Pyrethrum Firefly, Helianthus Lodden Gold and Montbretias; second, COMMANDER ROBINSON (gr. Mr. W. Roberts), Frankton Grange.

Messrs. ISAAC HOUSE AND SONS., Westbury, led for a group of Scabious, and Messrs. H. WOOLMAN, Shirley, led for a group of Dahlias with a grand display; Messrs. W. TRESEDER, Cardiff, being second, and Mr. H. CLARKE, Taunton, third.

PLANTS.

Mr. W. MANNING led in the class for fifteen stove and greenhouse plants with fair specimens of Allamanda nobilis, Bougainvillea Sanderiana, Ixora Williamsii, Eucharis grandiflora, Palms and Codiaeums; second, Messrs. JAS. CYPHER AND SONS, who showed Orchids, Ixoras, Codiaeums and Dracaenas.

A superb group of Begonias won first

prize for Messrs. BLACKMORE AND LANGDON, Bath, this firm showing in its usual splendid style and exhibiting among other fine varieties the new deep pink Bryan Langdon; second, MAJOR THOMPSON (gr. Mr. J. White), Oaken, with a capital group; third, Mr. H. WOOLMAN, Shirley, also with a goodly display.

In a local class for a group of Begonias, Mr. H. HOWELLS was the most successful competitor.

FLORISTS' FLOWERS.

For a display of Sweet Peas arranged on a table spaced fifteen feet by four feet, Mr. J. HAYCOCKS, Wrexham, led with a pleasing group of flowers set up in vases of various sizes and heights and a few baskets; Matchless, R. F. Felton, Valentine and Picture were among the best varieties; second, Messrs. W. SCOTT AND SON, Seyal; third, Messrs. HERD BROS., Penrith; fourth, Mrs. A. LEIGH, Tittensor; there were seven competitors.

Premier award for a dozen vases of Sweet Peas, distinct, was well won by Mr. G. RANDES, Morford, who had very fine flowers of Powerscourt, Royal Scot, Elegance, Mrs. Tom Jones, Cicely, Charming, George Shawyer, Warrior, Edna May, Picture, Matchless, and Wizard; second, Mr. A. SMITH, Crewe; third, Mr. E. BEBBINGTON, Market Drayton.

Mr. C. ENGELMANN, Saffron Walden, was the only entrant in the class for a group of perpetual-flowering Carnations, and was awarded first prize for one of the finest displays he has put up. The quality of the flowers was splendid, and there were grand baskets of Laddie, Red Laddie, Saffron, White Pearl, Iona, and Mrs. Richard Gerrish, the last of deep amber-apricot colour.

Mr. WATKIN SAMUEL, Wrexham, secured first prize for a group of Gladioli, with giant spikes of Early Sunrise, Le Triumph, White Giant, Prince of Wales, Dawn, Scarlet Princeps, and Love Fire; second, Mr. A. EDWARDS, Fordham, Ely; third, Messrs. HEWITT AND CO., Solihull. In the class for Primulinus varieties, Mr. SAMUEL was also the leading prize-winner, while in another class for these varieties Mr. A. EDWARDS secured the principal award.

Roses were again a fine feature, especially the exhibits in the large group class, in which Mr. THOS. ROBINSON, Nottingham, won first prize with a handsome group consisting largely of pillars of Mrs. H. Bowles, Los Angeles, Lady Inchiquin, Clarice Goodacre, Betty Uprichard, Lady Pirrie, Golden Ophelia, etc.; second Messrs. BEES LTD.; third Messrs. GUNN AND SONS, Olton; and fourth, Messrs. HORTON BROS., of Wolverhampton. In another Rose Class, for eighteen bunches, Messrs. GUNN AND SONS led with Mr. J. MATTOCK, second and Mr. HENRY DREW, third. Mr. DREW, had the best three baskets of Roses, Lady Inchiquin, Los Angeles and Golden Emblem, Mr. J. MATTOCK, second, with Mabel Morse, Marcia Stanhope and Lady Inchiquin.

One tent was set apart for floral arrangements. Mrs. J. NIXON, Alderley Edge, won first prize in the "Roses excluded" class; second, Mrs. A. E. REEVES, Balsall Heath. For a Rose table Mrs. J. NIXON was again first prize winner with a very pleasing arrangement of Apricot-coloured flowers in small deep brown baskets; second, Miss N. WARREN, Darwen.

GRAPES.

Seven competitors entered in the class for a dozen bunches of Grapes in four or more distinct varieties, consequently the competition was keen. The leading award of £20 was won by the EARL OF STRATHMORE (gr. Mr. D. McInnes), Glamis Castle, with a finely balanced set of fairly heavy bunches of large and finely coloured berries. There were four bunches of Muscat of Alexandria, two of Black Hamburgh, two of Alicante, two of Mrs. Pince and two of Gros Maroc—a very fine exhibit which totalled 102½ points. Second prize fell to the PWLLY-CROACHAN HOTEL Co. (gr. Mr. W. Owen), Colwyn Bay, always a keen exhibitor, who showed neat and very shapely bunches of Muscat of

Alexandria (4), Black Hamburg (3), Madresfield Court (4), and Buckland Sweetwater (total points 96); third, the DUKE OF NEWCASTLE (gr. Mr. S. Barker), Clumber, 95 points, whose best bunches were of Madresfield Court; fourth, Messrs. J. WEBBER AND SON, Minehead, 92 points; fifth, LORD BELPER (gr. Mr. J. McCartney), Kingston Hall.

Lt.-Col. H. C. LEGH (gr. Mr. A. J. Cook), Knutsford, led for four bunches of Grapes, with two grand bunches of Muscat of Alexandria, and two of Madresfield Court; finely berried and richly coloured; second, the EARL OF COVENTRY (gr. Mr. M. H. Wilson), Croome Court; third, Col. HEYWOOD LONSDALE (gr. Mr. J. Mills), Shavington Hall. The EARL OF STRATHMORE had the best pair of bunches of Muscat of Alexandria, of beautiful amber colour; second, Lt.-Col. H. C. LEGH; third, the TRUSTEES OF BARNWOOD HOUSE (gr. Mr. H. J. Baldwin), Gloucester.

In the local county class, M. G. ALDERSON, Esq. (gr. Mr. G. Davies), Gennow, led for a pair of bunches of White Grapes.

DESSERT FRUITS.

The best collection of a dozen dishes of dessert fruits came from Messrs. J. WEBBER AND SON, who, had black and white Grapes, Dymond and Dr. Hogg Peaches, Dryden and Pineapple Nectarines, Beauty of Bath Apples, White Currants, a grand dish of Morello Cherries, and a superb dish of Belle de Louvain Plums; second, CAPT. W. W. HAYES (gr. Mr. J. Maddock), Harcourt, who had fine Pineapple Nectarines, Royal George Peaches, and Oullin's Golden Gage Plums; third, V. C. VICKERS, Esq. (gr. Mr. W. Watkins), Newsells Park.

The only exhibitor in the class for a decorated table of dessert fruit was the DUKE OF NEWCASTLE (gr. Mr. S. Barker), Clumber, who had a fine exhibit which secured two-hundred-and-one-and-a-quarter points, and secured the Shrewsbury Tradesmen's Cup and twenty-five pounds. The leading subjects were Muscat of Alexandria, and Madresfield Court Grapes, the latter finely coloured; grand Ringleader and other Melons; Marguerite Marillat, Triomphe de Vienne and Souv. du Congress Pears; Bellegarde Nectarine and Royal George Peaches; Brown Turkey Figs; Cox's Orange Pippin Apples; Kirke's and Early Transparent Gage Plums. Francoa ramosa and white Carnations were used to decorate the table.

A. H. HEBER-PERCY, Esq. (gr. Mr. W. Catt), won first prize for a collection of nine dishes of dessert fruit, in the county classes; he had fine specimens of Emperor Alexander and Gascoyne's Scarlet Apples, Goshawk and Nectarine Peaches, Morello Cherries, Marguerite Marillat Pears, Hero of Lockinge Melon, and Black Hamburg Grapes; second, Col. H. HEYWOOD LONSDALE; third, M. G. ALDERSON, Esq.

In other county classes, some of the leading prize winners were Mr. M. G. ALDERSON, Hon. Mrs. WINN (gr. Mr. P. J. Fell), Cronkhill, Col. HEYWOOD LONSDALE, and the EARL OF COVENTRY.

The *Gardeners' Chronicle* Medal was won for the second year in succession by A. H. HEBER-PERCY, Esq. (gr. Mr. W. R. Catt), Hodnet Hall, Salop, with six dishes of hardy fruits; the competition was a very keen one, and the winning set consisted of Gascoyne's Scarlet Apples, Morello Cherries, Czar Plums, Langley Beauty Gooseberries, Baumforth's Seedling Raspberries, Seabrook's Black Currants—a very fine set; second, CAPT. F. BIBBY (gr. Mr. J. Clark), Sansaw; third, LIEUT.-COL. DICKSON.

S. WITHERN, Esq., Sandhurst, led for a dish of Nectarines with Pineapple, LIEUT.-COL. DICKSON, Lappington Hall, had the best dish of Peaches; and J. H. BOROUGH, Esq. (gr. Mr. Lane), Chetwynd Park, had the finest dish of Apricots. LIEUT.-COL. LEGH and J. BOROUGH, Esq., won the chief awards for Melons.

VEGETABLES.

Mr. T. BOWEN, Aberaman, led in a class for nine kinds of vegetables. Mr. W. ROBINSON, Garstang, won the premier award in Messrs. J. Carter and Co.'s class for six kinds, and Mr. C. KITCHENER, Olney, a working shoemaker, won second prize with a grand set

in which Model Leeks and Red Elephant Carrots were very fine. Mr. C. J. GWYER, Eywood, led in Messrs. Clibran's class, and Mr. T. M. JONES, Llandilo, in the class provided by Messrs. Dickson and Robinson.

In the Shropshire county class COL. HEYWOOD LONSDALE was the chief prize winner with splendid produce. A superb collection of twelve kinds won for Messrs. J. JONES AND SON, Ammonford, the leading award in the class provided by Messrs. Webb and Sons; the Ailsa Craig Onions were very fine.

In Messrs. Sutton and Sons' Class for nine kinds Mr. T. M. JONES, Llandilo, won the premier award with a very fine set in which the Prize-winner Runner Beans were unusually good.

NON-COMPETITIVE.

The trade displays were splendid, and filled a large space, indeed they were one of the great features of a great show. The following is the list of awards.

Special Trophies.—To Messrs. BAKERS, for terrace garden; Messrs. DICKSON AND ROBINSON, for flowers, fruit and vegetables; Messrs. ISAAC HOUSE AND SONS, for Scabious and other hardy flowers; KING'S ACRE NURSERY CO., for well-cropped fruit trees in pots; to Messrs. JARMAN AND CO., for hardy flowers; to Messrs. S. MCGREDY AND SON, for Roses; to Messrs. DORRIS AND CO., for Roses, Sweet Peas, Dahlias and Potatoes; to Messrs. J. PEED AND SON, for greenhouse plants; to Messrs. E. WEBB AND SONS, for flowers, fruit and vegetables; and to Messrs. WILSON AND AGAR, Turford, for Delphiniums and Gladioli.

Large Gold Medals.—To Messrs. ALLWOOD BROS. for Carnations; to Messrs. DANIELLS BROS., for fruits, etc.; to Mr. AMOS PERRY, for Water Lilies and other hardy flowers; to Messrs. TOOGOOD AND SONS, for vegetables, etc.; to Mr. E. MURRELL, for Clematis and Roses; to Mr. E. J. BAYLEY, for hardy flowers and vegetables.

Gold Medals.—To Messrs. BLACKMORE AND LANGDON, for Begonias, etc.; to Mr. JOHN FORBES, for hardy flowers; to Messrs. KELWAY AND SON, for Gladioli; to Mr. E. J. PARSONS, for fruits; to Mr. L. R. RUSSELL, for stove plants; to Mr. C. VICKERS, for floral designs; to Messrs. PRICHARD AND SONS, for hardy flowers; and to Messrs. STUART LOW AND CO., for Roses, etc.

Silver Medals.—To Messrs. BOWELL AND SKARRATT; Mr. H. CLARKE; Mr. CLARENCE ELLIOTT; Mr. H. ELLISON; Messrs. E. F. FAIRBAIRN AND SONS (Carlisle); Messrs. H. HEWITT AND CO.; Mr. JOHN JONES (Wen.); Messrs. JONES AND SON (Shrewsbury); Messrs. MAXWELL AND BEALE; Mr. J. H. PEMBERTON; SHROPSHIRE COUNTY COUNCIL; Mr. WATKIN SAMUEL; Messrs. W. H. SIMPSON AND SONS, Messrs. W. WATKINS; and Mr. F. E. WOOD.

ROYAL HORTICULTURAL OF ABERDEEN.

AUGUST 13, 14 and 15.—The venue of this year's exhibition of the Royal Horticultural Society of Aberdeen was, for the first time, transferred to the city's latest acquired public park at Hazlehead. The change, with its exquisite setting, proved an admirable one, and, what was more, the display was equally delightful. Mr. C. M. Barclay-Harvey, M.P. for Kincardineshire, performed the opening ceremony. In the evenings a charming effect was produced by thousands of coloured electric lights interspersed amid the fine old trees, and with excellent music the show proved very attractive. There were in all three divisions, with extra classes for amateurs only.

OPEN CLASSES.

PLANTS IN POTS.—The entries here were not quite so numerous as is usually the case at Aberdeen, but the quality was very good. In the class for a circular group of pot plants arranged for effect on the ground (not exceeding ten feet in diameter), five entries were forthcoming. The first prize was won by Mr. ROBERT MURRAY, Enfield Gardens, for an artistic scheme which included some well-grown Begonias, Gloxinias and Liliums. VICOUNTESS COWDRAY Dunecht, Aberdeenshire (gr. Mr. William Smith), was placed second. The Dunecht exhibit contained superb specimens of table plants,

The four best specimen plants were shown by LADY COWDRAY, Mr. BENZIE, Morken, taking second and third places. Ferns were a fine display, leading places going to LADY COWDRAY and COLONEL GILL, Dalhobby (gr. Mr. Alexander Brebner). Zonale Pelargoniums, which were particularly attractive, were well shown, Morken gaining the leading honours, and the victory was repeated for Fuchsias. Begonias were finely shown, and the premier honours were won by Mr. MURRAY both for single and double varieties. This exhibitor also excelled for Gloxinias.

There was a fine display of cut flowers. COLONEL GILL, Dalhobby, led easily for Roses with finely-grown specimens. The Silver Challenge Cup for Roses was won by COLONEL GILL. Miss McLENNAN, Springhill, Aberdeen, (gr. Mr. D. L. Scorgie), had the finest Dahlias, while the premier honours for Asters and hardy herbaceous flowers were won by Mr. MURRAY. LADY COWDRAY, with superb specimens of Zonale Pelargoniums and Carnations or Picotees, had meritorious wins. Mr. J. A. GRIGOR, Duff House, Banff, gifted to the people of Banff and Macduff by the late Duke of Fife, led for Gladioli. Miss McLENNAN, Springhill, had a fine entry for twenty distinct varieties of cut flowers and fine foliage bedding plants. SIR THOMAS JAFFREY, LL.D., Edgell, Aberdeen, chairman of the society (gr. Mr. J. Cook), led for twelve bunches of annuals, and Miss McLENNAN excelled in the class for twelve spikes of double Stocks. LADY SEMPILL, Fintray House, Aberdeenshire (gr. Mr. W. D. Anderson) had the best six bunches of Chrysanthemums from the open. Sweet Peas formed a fine display, and here Mr. J. A. GRIGOR, Duff House, Banff, had matters pretty much his own way.

FRUIT.—It was freely admitted that the exhibits in this section were the best brought together by the Society since the war. An outstanding feature was the collection of hardy fruits, shown by LADY COWDRAY, Dunecht. It consisted of finely-grown bunches of Black and White Grapes, Melons, Plums, Apples, Peaches, Pineapples, and Pears. It worthily won the medal given by the proprietors of *The Aberdeen Press and Journal* and two guineas special prize offered for the best exhibit of home-grown fruit grown by the exhibitor. There were over one hundred and fifty entries in the classes for fruit, and the leading prize winners were:—Mrs. MILNE, of Logie (gr. Mr. P. F. McQueen) for Cherries and Melons; Mr. JAMES ANDERSON, Crommallie, Pitcairle, for Raspberries; Mr. NORMAN M. DUNCAN, Johnston House, Aberdeen, for green, red and yellow Gooseberries and Black Currants; Mr. T. C. GARDINER, Palmer's Cross, Elgin, for green and red Gooseberries and Red Currants; LADY COWDRAY and Mr. BENZIE, Morken, divided the honours for Black and White Grapes, as they also did for Nectarines and Peaches. Apples were well-shown, chief prizes going to LADY COWDRAY and Miss McLENNAN, Springhill. LADY COWDRAY had the best Jargonelle Pears, and excelled in the class for any other Pears and Plums. Mr. GEORGE MELDRUM had the finest Tomatoes.

VEGETABLES.—Aberdeen has always been noted for its fine display of vegetables, and this year was no exception to the rule. The entries were of a very good standard of merit, and numbered three hundred and twenty-five.

For the best collection of vegetables arranged on a table space of four feet by three feet, and comprising eleven varieties, viz.:—Peas, Cabbages, Cauliflowers, Potatoes, Turnips, Carrots, Onions, Parsley, Beetroots, Celery, and Tomatoes, the gold medal of the Society was awarded to Miss McLENNAN, Springhill (gr. Mr. D. L. Scorgie). It was a capital entry, and worthily sustained the tradition of Springhill for finely grown vegetables. Messrs. W. and B. LAWSON, Cornhill, Aberdeen, led for the best collection open to market gardeners with a very meritorious entry. Onions were well shown, Mrs. MILNE, of Logie, taking premier place.

As usual there were some exquisite Roses shown by Nurserymen and Florists, leading honours going to Messrs. ADAM AND CRAIGMILE, Fernielea Nurseries, Aberdeen.

MARKETS.

COVENT GARDEN, Tuesday, August 18th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Hydrangea	
cuneatum	10 0-13 0	white, 48's per	18 0-30 0
per doz.		doz.	
—elegans	10 0-12 0	—pink, 48's per	18 0 24 0
Aralia Sieboldii	9 0-10 0	doz.	
Araucarias		—blue, 48's per	30 0-48 0
per doz.	30 0-42 0	doz.	
Asparagus plu-		Nephrolepis in	
mosus	12 0-18 0	variety	12 0-18 0
—Sprengeri	12 0-18 0	—32's	24 0-36 0
Aspidistra, green	36 0-60 0	Palma, Kentia	30 0-48 0
Asplenium, per		—60's	15 0-18 0
doz.	12 0-18 0	Pteris, in variety	10 0-15 0
—32's	24 0-30 0	—large 60's	5 0-6 0
—nidus	12 0-15 0	—small	4 0-5 0
Cacti, per tray,		—72's per tray	2 6-3 0
—12's, 15's	5 0-7 0	of 15's	
Ocotons, per doz.	30 0-45 0	Viscaria, 48's	15 0-18 0
Cyrtomium	10 0-25 0	per doz.	

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum deco-		Heather, white,	
rum, doz. bun.	9 0-10 0	per doz. bun.	12 0
—cuneatum, per		—pink, per doz.	
doz. bun.	6 0-8 0	bun.	8 0-9 0
Asparagus plu-		Honesty, per doz.	
mosus, per bun.		bun.	9 0-12 0
long trails, 6's	2 0-3 0	Lapagerias, per	
med. sprays	1 6-2 6	doz. blooms	3 6-4 0
short	0 9-1 3	Lilium longiflorum	
—Sprengeri, per bun.		long, per doz.	2 6-3 0
long sprays	1 6-2 0	—speciosum	
med.	1 0-1 6	album, long, per	
short	0 4-1 0	doz.	2 6-3 6
Asters, white, per		—short, per doz.	2 6-3 6
doz. bun.	4 0-8 0	—speciosum	
—coloured, per		rubrum, long,	
doz. bun.	4 0-8 0	per doz. blooms	2 6-3 0
Carnations, per		—short	1 6-2 0
doz. blooms	1 6-3 0	Lily-of-the-Valley,	
Chrysanthemum		per doz. bun.	24 0-30 0
maximum, doz.		Montbretia, per	
bun.	3 0-4 0	doz. bun.	4 0-6 0
Chrysanthemums		Orchids, per doz.	
—white, per doz.		—Cattleyas	36 0-48 0
blooms	4 0-6 0	—Cypripediums	5 0-7 0
—bronze, per doz.		Physalis, per doz.	18 0-30 0
blooms	2 0-3 0	Roses, per doz.	
—bronze, per doz.		blooms, Rich-	
bun.	12 0-18 0	mond	1 6-2 6
—yellow, per doz.		—Liberty	1 6-2 6
blooms	5 0-7 0	—Madame Butter-	
—yellow, per doz.		fly	1 6-2 6
bun.	12 0-15 0	—Mme. A. bel	
Coreopsis, per doz.		Chatonay	1 6-2 6
bun.	1 3-1 6	Melody	1 6-2 0
Cornflowers per		Molly Sharman	
doz. bun.	2 0-2 6	Cornford	2 0-2 6
Croton leaves		Opheila	2 0-2 6
per doz.	0 9-2 6	Sunburst	2 0-3 0
Delphiniums, var-		Scabiosa caucas-	
ious, per doz.		ica, per doz.	4 0-5 0
spikes	3 0-4 0	Smilax, per doz.	
Fern, French, per		trails	3 0-3 6
doz. bun.	0 9-1 0	Statice, mauve	5 0-6 0
Gaillardia, per		—yellow, per doz.	5 0-6 0
doz. bun.	2 6-3 0	bun.	5 0-6 0
Gardenias, per		—white, per doz.	5 0-6 0
box, 12's, 18's	6 0-12 0	bun.	5 0-6 0
Gladioli, white,		—pink, per doz.	5 0-6 0
per doz. bun.	12 0-15 0	bun.	5 0-6 0
—primulinus, per		—latifolia, per	10 0-12 0
doz. spikes	2 0-2 6	doz. bun.	
—Halley, per doz.		—incana, per doz.	9 0-12 0
spikes	1 0-1 6	bun.	
—Prince of Wales		Stephanotis, per	
per doz. spikes	1 3-1 6	72 pipe	3 0-3 6
—scarlet, per doz.		Stock, English	
spikes	2 0-3 0	white	6 0-8 0
—cream, per doz.		Sultan, white, per	
spikes	3 0-4 0	doz. bun.	4 0-6 0
—Giant White,		—mauve, per doz.	4 0-6 0
per doz. spikes	2 0-3 0	bun.	5 0-6 0
Gypsophila panic-		—yellow, per doz.	5 0-6 0
ulata, double,		bun.	5 0-6 0
per doz. bun.	15 0-18 0	Sweet Peas, per	
		doz. bun.	4 0-9 0
		Violas, per doz. bun.	1 0-1 6

REMARKS.—The latest subjects in this department are Honesty and Physalis. Chrysanthemums are more plentiful and consist mostly of disbudded blooms, Debutante (white), Mercedes (yellow), and bronze Mrs. Pearson. Increased supplies of spray bronze and yellow blooms are to hand. Asters are arriving in large quantities but they vary considerably in quality. Small consignments of Delphiniums are again arriving in excellent condition. All other supplies appear ample for present requirements. Trade generally is quiet.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English—		Lemons, Messina,	
—Early Victoria,	2 6-4 0	per box	12 0-18 0
bushel		—Murcia	12 0-20 0
—Grenadier	3 0-8 0	—Naples	18 0-25 0
—Gladstone,		Melons (Forced)	
bushel	2 0-2 0	basket	10 0-15 0
—Beauty of Bath		—Cantaloupes	3 0-8 0
½-bushel	2 0-8 0	—Valenci, per	
Australasia—		case	9 0-12 0
—Sturmer	8 0-12 0	Nectarines, per	
Bananas	14 0-22 6	doz.	6 0-18 0
Gages, Spanish		—South African,	
½-sieve	10 0-15 0	per case	20 0 25 0
Grapes—		Peaches, English	
—Belgian, Alic	1 0-1 6	per doz.	6 0-18 0
—English	1 3-2 0	Pears, Williams',	
—Colmar	2 0-3 0	bon Chretien,	
—Hamburgh, lb.	1 6-3 0	48's	4 0-7 0
—Muscat	2 6-6 0	—crates	5 0-6 0
—Canon Hall	3 0-7 0	Pines	5 0-8 0
Grape Fruit,		—South African,	
—Florida, finest	55 0-60 0	box	6 0-7 0
—South African,		Plums, English	
per case	30 0-35 0	Czar	5 0-6 0
		—French, crate	6 0-8 0
		—Victoria	14 0-16 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—		Mushrooms, cups	2 6-3 6
—Evesham, flat	6 0-8 0	—Broilers	1 3-2 0
—Scarlet Runner,		Marrows, tally	5 0-7 6
bushel	10 0-12 0	Onions—	
Beets, new, per		—English, per cwt.	10 0-12 0
doz. bun.	3 0-4 0	—Valencia	9 0-12 0
Cabbage, per tally	7 6-12 6	—Dutch	11 0-12 0
Cauliflowers, per		Paranips, per cwt.	4 0-6 0
doz.	2 0-4 0	Potatoes—	
Carrots, new, per		—English, per	
bag	5 0-6 0	cwt.	6 0-8 0
Cucumbers, per doz.	4 6-5 6	Tomatoes, English,	
—Flats, 36's, 42's	14 0-18 0	per strike—	
Dutch Onions	11 0-12 0	—pink	5 0-5 6
Greens, best, per		—pink & white	5 0-5 6
bag	1 6-2 6	—blue	4 0-4 6
Horseradish, per		—Guernsey	— 4 0
bundle	2 0-3 6	—Dutch	3 0-3 6
Lettuce, Cos, doz.	1 0-3 0	Turnips, new, per	
—Cabbage Let-		doz. bun.	5 0-7 6
tuce	1 6-2 6		

REMARKS.—The London trade is very quiet, but there is a fair amount of business with provincial and seaside towns. Early English dessert Apples are arriving in fair quantities, the most popular sorts being Beauty of Bath and Mr. Gladstone. A few fruits of Lord Derby and Lord Suffield are also available. Imported Apples are very scarce. Czar and Early Orleans Plums are being marketed in fair quantities. There is not a great demand for Tomatoes and prices have dropped to 4s. 6d. to 5s. 6d. per dozen pounds for good samples. Peas are over, but Scarlet Runners are now available in quantity.

GLASGOW.

Plums dominated the fruit market during the latter part of the week. Heavy consignments from Evesham and other English districts arrived on Friday and were quickly disposed of at steady to firm prices. Victoria Plums were worth from 8d. to 10d., per lb.; Czar, 6- to 7- per half sieve; Royal, 12- to 14-; Damocenes, 9d. per lb.; Cherry, 8d.; Egg, 2d., and Gages, cooking 6- to 8-; table, 14- to 19-; Gage Plums, 10- to 12-. Black Currants made 1/2 to 1 1/4 per lb.; Raspberries, 9d. to 1 1/4; Strawberries, 8d., and Red Currants, 6d. and 7d., while Gooseberries were dearer at 4 1/2d. per lb. Williams' bon Chretien Pears (French) brought 6- to 7-; Hambro Grapes, 1 6- to 2- per lb.; Alicante (Dutch), 1 1/4 to 1 6-; and Almeria, 22- to 25-. Melons realised 10- to 11- per case; Grape Fruit 30- to 35-; Mercia Lemons, 18- to 20- (300) and 16- to 18- (36); Oranges (Californian), 28- to 32-. Honey was plentiful at 1 1/2 to 1 9- per lb.

The cut flower market was quiet and featureless, and as there was no increase in the demand, prices moved within narrow limits. Chrysanthemums were more plentiful and met with a ready sale. Holme's White ranged from 4d. to 6d. per bunch; White Countess, special, 5- to 6- per dozen, and 2- to 2 1/4 for 6's; No. 1 White, 2- to 2 1/2; bronze, 1 6- to 2 6- per dozen. Carnations were mixed in quantity, and while certain salesmen realised 1 6- to 2 3- per dozen, others realised 1- to 1 6-. Roses were steady at 1- to 2- per dozen. Gladioli were slow to move; ordinary loose spikes were sold at 1- to 2- per dozen, and Prince of Wales, Halley Odlin, and Maiden's Blush averaged 10d. to 1 1- for 6's. Small bunches of Sweet Peas were worth 1 1/2d. to 3d. per bunch, large, 3d. to 6d.; Marguerites fetched 2d. to 3d.; Gypsophila, 3d. to 7d.; Stocks, 6d.; Asters, small, 1d., large, 3d. and 4d.; Statice, small 1d. and 2d., large, 4d. to 6d.; Smilax, 1- to 2-, and Asparagus, 6d. to 2-. Prices for Lilium longiflorum (Harrisii) were steady at 3- to 4-, and L. lancifolium rubrum 2 3- to 2 9-.

In the vegetable section, Scotch Tomatoes, which were sold at 7d. to 10d. per lb. earlier in the week, declined to 6d. and 8d. on Friday, while English and Guernsey Tomatoes were round 5d., and Dutch, 4 1/2d. Cucumbers ranged from 2 6- to 6- per dozen; Lettuces, 1- to 2-, and Mushrooms, 6d. to 1-.

ANSWERS TO CORRESPONDENTS.

APPLE PEASGOOD'S NONSUCH DROPPING ITS FRUITS. F. N. Peasgood's Nonsuch is probably the largest and most handsome Apple grown, and upon a west wall in the north is worth cultivating for decorative purposes alone. If your tree has filled up its allotted space and cannot be allowed to extend further, your only remedy is to root-prune the tree in October or November, entirely removing the strongest roots that have gone downwards, cutting back strong extending roots to about two-and-a-half-feet from the stem, but retaining all the small, fibrous roots, laying them in nearer the surface. Mulch the tree next summer and see that it does not suffer for want of water. This treatment will check the strong growths—which cause the fruits to drop—and again bring the tree into full bearing.

FAIRY RINGS ON A LAWN. B. M. B. The mycelium of the fungus, which produces the rings of Mushrooms in the grass lives on the decaying vegetation for several inches below the surface. It also grows outwards, and next year's ring will be outside this year's ring. In order to kill the mycelium, the lawn for the full breadth of the ring and an equal width outside it, should be soaked with Bordeaux mixture, four times, at intervals of eight days. If the soil is very firm it may be opened by making small holes with the prongs of a fork to let the liquid soak into the soil more freely. A fairly strong solution of the Bordeaux mixture may be made with six pounds of sulphate of copper, four pounds of quicklime, and forty-five gallons of water.

NAMES OF PLANTS. J. M. 1, Trifolium pratense; 2, Hypericum perforatum; 3, Stachys Betonica (sometimes named Betonica officinalis); 4, Polygonum aviculare; 5, Alisma Plantago; 6, Vicia Cracca; 7, Galium molluga; 8, Galium verum; 9, Spiraea Ulmaria (Meadow Sweet); 10, Calamintha Clinopodium; 11, Agrimonia Eupatoria (Agrimony); 12, Epilobium hirsutum; 13, Inula dysenterica (sometimes named Pulicaria dysenterica); 14, Medicago sativa (Purple Medick); 15, Ononis repens (Restharrow); 16, Thymus Chamaedrys; 17, Linaria vulgaris (yellow Toad-flax); 18, Scabiosa arvensis; 19, Bartsia Odontites (sometimes named Odontites rubra); 20, Senecio Jacobaea (common Ragwort); 21, Centaurea Scabiosa; 22, Origanum vulgare (Common Marjoram); 23, Caulis Anthriscus (in some books named Torilis Anthriscus); 24, Prunella vulgaris (Self-heal); 25, Campanula Trachelium (Nettle-leaved Bellflower); 26, Stachys sylvatica (Woundwort); 27, Chrysanthemum Parthenium (Feverfew); 28, Malva sylvestris (common Mallow); 29, Cnicus arvensis (Field Thistle); 30, Lamium album (with mildew on the leaves).—A. B. Salvia Sclarea (Clary), a member of the Sage Order and genus. The flowers of the Nettle family are mostly small, green and insignificant. Some have very showy fruits, and others useful fruits, such as Figs and Mulberries. W. S. Festuca rigida, an annual grass that grows on banks and walls. Some books name it Glyceria rigida, but the former name is more correct.

NECTARINE FRUITS BITTER. F. J. R. Your Nectarine fruits should not be bitter if you have exposed them to sunshine and admitted plenty of air to the house during the ripening stages. If you have syringed the trees with Quassia extract or other insecticide during the last swelling of the fruits this would account for the bitterness; if Quassia is used the trees should be syringed heavily with clear, soft water early on the following morning. Mix plenty of lime rubble with your compost when top dressing the borders, and give two or three light applications of sulphate of potash during the growing season.

Communications Received.—W. E. T.—P. S.—E. S.—H. E. P.—G. E. G.—Constant Reader.—H. G.—J. M. W.—E. T. E.—Onyx.—E. E. D.—R. H. C.

THE Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 60.7.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, August 26, 10 a.m. Bar. 30.1, temp. 66°. Weather, Bright.

A VERY brief but very interesting account of experiments undertaken with the object of speeding up fruitfulness in Apples is contributed by Mr. G. T. Spinks to the current number of the *Journal of Pomology*. The problem which the author set himself may be stated thus: seedling Apples, like most or all plants of tree-habit, take a long time in growing to maturity. Before any fruit buds are formed some six years elapse and many more years pass before the tree comes into full bearing. It is known that the stock has an influence on the precocity or tardiness of "growing up" to the fruiting stage. Mr. Hatton's interesting experiments with dwarfing stocks show that when extreme dwarfing stocks are used fruitfulness comes early in the scion. But, needless to say, this method of hustling Apples through the adolescent stage is of no use for the commercial Apple grower. For light come, light go, and the much dwarfed, precociously fruiting trees are too short-lived for profitable use in the commercial orchard. By using stocks less dwarfing than those of the Juan de Metz type, but nevertheless more dwarf than the ordinary Crab, the time that trees take to come into full bearing is less than when the

trees are grafted on standard Crab stock of vigorous habit. But even so youth will be served and there is still a period of six years during which the grower must be content with no return in the way of fruit. With these facts in mind it is natural that those whose object it is to promote the fruit-growing industry should engage in experiments in order, if possible, to curtail the period of unfruitful adolescence. The physiologist might indeed expect that the experiment would prove arduous. For a certain spaciousness of time for growing up seems to be decreed to all living organisms. Nevertheless there are grounds based on discoveries in animal physiology for believing that ways of hastening maturity will be discovered. For it seems reasonable to suppose that the passage from adolescence to maturity is the outcome of some chemical change in the cells and tissues, and if so, it only needs to discover the nature of the chemical change to devise means of speeding up its advent in the plant. In the meantime, however, and pending the ingenious experimenter who will introduce new ideas and new methods of experimentation, it is as well that the ground should be cleared by ascertaining whether early maturity may be induced by any of the ordinary methods. This Mr. Spinks has done. He tried the effects of shaping, pruning, ringing (which is often successful in making barren adult trees fruitful), root pruning alone and combined with shoot pruning, manuring, and various combinations of these practices, together with root restriction by growing in pots. In spite of all this experimental solicitude the seedling Apples in their Peter Pan-ishness refused to grow up. They took their own time, and after the five years during which the experiment lasted they had none of them borne fruit nor shown sign of fruit buds. The thralldom of youth held them and none of the experimental blandishments induced them to escape from it. Indeed the only positive conclusion which would seem to emerge from these experiments is that the best way to encourage Apples to become mature is to promote vigorous growth. Checking, which so often induces flowering in more ephemeral plants, seems to be without effect in tree forms. So far, therefore, the fruit grower must be content to wait upon Providence. Nevertheless we are convinced that the experimental possibilities are by no means exhausted and that ways will ultimately be found for robbing Apples of their youth and therefore assisting the fruit grower to get an earlier return on his outlay. We hope, therefore, that the experimental stations for fruit growing will not too lightly abandon what is evidently a very difficult undertaking. They, like the young fruit trees, have time on their side, and might well expend some of it in depriving the Apple of some of the long, long days of youth.

Early Offenham Cabbage in the North.—A trial of Spring Cabbages conducted at Morpeth and Wylam under the auspices of the County of Northumberland Educational Committee shows that the Early Offenham type of Cabbage is the best in the north for spring cutting. The most successful Cabbages in the trial were the local strains of Mr. F. Lowrison, Hepscott: J. Temple, and J. Cairns (W. M. Price), Morpeth, together with the varieties Toogood's Nonesuch, Clucas' Early Market, McEwan's Early, and Carter's Beefheart. All these varieties were noteworthy for their evenness, freedom from bolting, hardness,

and the development of large, solid hearts at an early date. Their points of similarity were striking, and Mr. C. W. Mayhew, the County Instructor in Horticulture, states that it is difficult to refer them to a type indicated by a variety of long standing, unless it is the "Offenham" strain. They are undoubtedly the forms most suitable for the districts, and the reliance of the growers on their own raised seed is of the greatest economic importance. In more southerly climes they would probably be prone to leafiness and fail to make good hearts quickly.

The Blairgowrie Raspberry Crop.—During the week ending August 8, 484 tons of Raspberries were dispatched from Blairgowrie Station. The total amount of this fruit dispatched from Blairgowrie in that and the previous two weeks was 1,679 tons, which is more than the total for last season.

Long Ashton Research Station.—The fruit plantations of the Research Station, Long Ashton, Bristol, will be open to visitors from 11 a.m. to 4 p.m. on Tuesday, September 15. During the course of the day the experimental work in progress in the plantations and in the laboratories will be explained by members of the staff, and exhibits of horticultural interest will be shown. The Controller of Horticulture, W. G. Lobjoit, Esq., O.B.E., J.P., has intimated his intention of being present on this occasion, and will give an address to the fruit growers during the afternoon.

Admission to the Royal Botanic Gardens, Kew.—Free admission to Kew on most days of the week seems likely to be of short duration, for the Select Committee on Estimates has reported to the House of Commons the "The fees for admission to Kew Gardens have been abolished at a loss of about five thousand pounds a year, which was formerly collected practically without any expense. In view of the fact that the abolition does not seem to have led to an appreciable increase in the number of visitors, your Committee, therefore, recommend that the entrance fee of one penny should be immediately re-imposed." It will be remembered that the charge for admission to Kew was primarily stated to be of the nature of a "War Measure," and that a charge of 6d. was made for admission on Tuesdays and Fridays and this was continued after the charge for admission on other days was abolished.

National Dahlia Society.—Mr. W. J. Chittenden, the Hon. Secretary of the National Dahlia Society, desires us to remind intending exhibitors at the annual show, which is to be held at the R.H.S. Hall, Vincent Square, on September 9, next, that all entries must be received by him at 2, Dents Road, Wandsworth Common, S.W.11, not later than September 5.

Proposed Trial Grounds for the North of England.—The Sub-Committee appointed by the North of England Horticultural Society visited on the 27th of June the site at Harlow Moor, Harrogate, as offered by the Harrogate Corporation for a trial garden. The visiting Sub-Committee, after inspecting various parts of the site, were unanimously of the opinion that suitable land for the purpose of a trial ground could be obtained upon this property. Moreover, all were unanimously of opinion that Field A (marked red upon the map of the property) should form the nucleus of such a ground. The field in question is about one-and-a-half acre in extent; but about half this area is at present waterlogged and not immediately available for the cultivation of hardy or half-hardy florists' flowers. The soil is a good-bodied loam, about nine inches in depth and full of fibre. The sub-soil is rather heavier in character, but still comparatively open and easily workable, and there is no doubt that under cultivation a sufficient depth of excellent soil could ultimately be obtained at reasonable cost. The slope is a gentle one to the east. Shelter is provided by a belt of trees along the northern boundary, and the ground lies fully open to the south. The Harrogate

Corporation is very favourable to the scheme, and would be prepared to sub-let the ground required for a nominal rental—five pounds per annum was suggested. It was thought that the tenancy might, in the first case, be for seven years, with power on the part of the lessees to break tenancy at the end of three years, and to extend the tenancy at the expiration of the seven years for a further period. These items would have to be brought up for complete consideration on a future occasion. It was understood that the Harrogate Corporation would be prepared to make, at their own charges, a pool and water garden in the lower portion of the field, to drain the upper portion and to provide for the ultimate overflow from the pool into the drains upon the highway. At a meeting of the Council of the North of England Horticultural Society, on the 29th ult., it was resolved to appeal for a sum of two hundred and fifty pounds, being twenty-five per cent. of the estimated cost annually, for the first three years, and in the meantime, try and satisfy the request of the R.H.S. for a complete scheme in detail. A meeting of all those who may be interested will be called at 11 a.m., on Thursday, September 17, which will be a suitable time owing to the presence of Mr. W. G. Lobjoit, Controller of Horticulture.

Kirstenbosch Botanic Gardens.—A scholarship tenable at Kirstenbosch has been founded by Mrs. H. Solly, of Sir Lowry's Pass, as a first endowment of the National Botanic Gardens of South Africa. This scholarship is in memory of Mrs. Solly's late son, and is to be called the Edward Muspratt Solly Scholarship. It is a one-year scholarship of one hundred pounds, and in special cases may be continued for a second year. The holder will reside at Kirstenbosch, and will engage in botanic research work under the Director of the Gardens.

Presentation to Mr. F. C. Stainsby.—On the occasion of his recent retirement from the charge of the well-known gardens at Brocklesby Park, the Lincolnshire seat of the Earl of Yarborough, Mr. F. C. Stainsby was presented with an eighteen carat gold English lever watch by his many friends on the estate, and in the neighbourhood. Mrs. Stainsby was presented with a gold brooch, set with pearls and sapphires. Mr. Stainsby had been at Brocklesby for over twenty-two years, and, in addition to his work in the gardens there, he has identified himself with the religious and social life of the parish. The Brocklesby Park Cricket Club, of which Mr. Stainsby was Secretary and Treasurer, presented him with a handsome smoker's cabinet. Mr. Stainsby is also a very active member of the Committee of the Royal Gardeners' Orphan Fund, and during his time at Brocklesby collected a considerable sum for the fund. Mr. Stainsby commenced his gardening career under the late Mr. Richard Gilbert, at the Burghley Gardens, Stamford, and continued his training at Worksop, Osberton Hall, and Addington Park, while before going to Brocklesby he was in charge at the Ferneries, Welby, Lincolnshire. Mr. Stainsby has settled at Grimsby where he intends to practise as a Garden Consultant.

Wealth of Potato Blossoms this Season.—In my peregrinations in the north-eastern—and lake—districts of Scotland recently, writes a correspondent, I have been greatly impressed with the abundance and profusion of the Potato blossom. Fields comprising different varieties look gorgeous, their loveliness filling the eye in a most delightful manner, while the scent emanating from many of the flowers is deliciously fragrant. There are no exceptions, even the shy-blooming Duke of York excelling itself, and showing a large number of flowers. When one remembers the great wealth of blossom produced by the Whin and the Broom this year and now the same with the Potato, may we not take it that it augurs well for a bountiful harvest? The whole countryside looks exceedingly promising, the grain prospects are excellent—Oats and Barley especially—while there is sure to be a bumper crop of Potatoes. Growers will have to be very wary in handling

the crop, and remember the mess made a year or two ago, when we had glutted markets and hundreds of rotting pits. Too high prices should not be insisted upon, and even though there is a surplus, growers should be quite able to get their seeding expenses back—aye, and with something over.

Mr. J. C. Allgrove.—The winning by Mr. J. C. Allgrove, of Middle Green Nursery, Langley, Slough, of the Royal Horticultural Society's Gold Medal for fruit on Tuesday last offers an occasion for publishing a portrait of this well-known nurseryman, who has, we suppose, as many successes to his credit for fruit culture as any other trade grower in the country. He has specialised in fruit-growing during practically the whole of his business career, having served his apprenticeship at Messrs. Osborn's nurseries under the celebrated fruit foreman Charles Pitman. Later he was sent by the firm to their new fruit tree nursery at Hampton, where he remained until the death of Mr.



MR. J. C. ALLGROVE.

R. Osborn in 1882, when the business was disposed of. By this time Mr. Allgrove had established a reputation as a clever fruit grower, and he was asked to interview the late Sir Harry (then Mr.) Veitch, who there and then engaged him to take charge of the fruit nursery which the firm of James Veitch and Sons had just taken at Langley, near Slough. This branch of the business became very successful under Mr. Allgrove's management, and the Langley fruit trees were recognised as being among the best to be obtained in the country. The confidence of the firm in their manager's abilities was demonstrated by the transference of the Rose and hardy herbaceous plant departments of the business to Langley, the nursery gaining a reputation in these two directions as high as that already obtained for fruit trees. When Sir Henry Veitch decided to discontinue the business of James Veitch and Sons, Mr. Allgrove took over the entire stocks of his departments and carried on the business on his own account. Whilst Mr. Allgrove was in Messrs. James Veitch and Sons' employ they won high awards at all the chief exhibitions in the country, and it may afford some idea of his successes when we state that he has won twenty-six Gold Medals for collections of Gooseberries and fruit trees in pots. His greatest effort was the fruit garden he planted at the International Horticultural Exhibition of 1912; he has won no fewer than six Gold Medals for fruit since September, 1924. Amongst the

many new fruits sent out from Langley are Apples: Rev. W. Wilkes, St. Everard, Langley Pippin, S. T. Wright, and Ball's Pippin; Plum: Allgrove's Superb; Bullace: The Langley; Gooseberries: Langley Gage, Langley Beauty, and Golden Gem; and Strawberries: Veitch's Scarlet, The Alake, and Lord Kitchener. We have not space to enumerate the many new herbaceous plants and alpinas for which Mr. Allgrove has received awards, nor to describe his excellent work in the cultivation of Roses. He is a member of the R.H.S. Fruit and Vegetable Committee and is highly esteemed by his colleagues. He is a man of sterling integrity, possessed of a charming personality and sympathetic nature, with intense enthusiasm for his work and for the advancement of horticulture generally.

A World's Forestry Congress.—It is intended to hold a congress of experts in forestry, timber and the allied industries from all parts of the world, in Rome, early in May, 1926. The arrangements are being made by a Committee appointed by the International Institute of Agriculture and the Italian Government, and it is confidently anticipated that the discussions will prove valuable and profitable. During the sitting of the congress an exhibition of forest products, machinery and implements used in connection with the industry will be held in conjunction with the International Fair at Milan. Excursions will be made to the most important forests in Italy and, if circumstances permit, in other countries as well.

New South African Plants.—Amongst the new plants cultivated in the Botanic Gardens at Kirstenbosch, the *Journal of the Botanic Society of South Africa* mentions the following as being of especially good garden value. *Ursinia cakilefolia* is a very distinct annual which grows to a height of from nine inches to twelve inches, and bears rich orange-coloured flowers over a long period. Its finely cut foliage, erect habit, free-flowering, and glorious colour make it the finest spring-flowering annual Daisy extant. It is said to be a very local plant, and was introduced into the Botanic Garden from cultivated plants. *Ursinia anthemoides* is similar in habit. Its flowers are either light orange, yellow or chartreuse green, with or without maroon zones. This species, which occurs in fairly open bush country, has been introduced to England but does not seem to have become cultivated to any extent. The Kirstenbosch authorities are of the opinion that inferior strains were sent. *Diascia rigescens* flowers several times during the South African summers. This herbaceous perennial produces foot-long terminal racemes of deep pink flowers, which becomes a soft pink when fully expanded. It requires a good, porous soil and plenty of moisture during the growing season. *Sutera grandiflora*, although related to *Diascia*, is of distinct habit and appearance. It is a soft-wooded shrub growing to a height of about five feet, and the shoots are terminated with many-flowered racemes of lovely light lavender-blue flowers of perennial Phlox appearance. It is recommended for use as "dot" plants in summer bedding schemes. *Pycnostachys remotifolia* is said to bear large panicles of the bluest of all blue flowers—flowers of a bright vivid Gentian blue. This East African plant flowers during late May and June at the Cape, and grows to a height of from three feet to four feet.

Brahan Castle and its Trees.—The members of the Northern branch of the Royal Scottish Arboricultural Society recently visited the woods of Brahan Castle. Accompanying the party were Lord Lovat, chairman of the Forestry Commission, Mr. Scott, divisional officer, and Mr. Newton, of the Forestry Commission. Mr. William Lackie, the factor, and Mr. Alexander Fraser, head forester, acted as guides. A magnificent specimen of *Abies grandis* in the avenue leading to the castle was greatly admired, its measurement being twelve feet nine inches in girth and one

hundred feet in height. The Beech Mount in the part of the policies called The Dell created much interest. It contains a number of great Beeches on and around what was once a pre-historic burial ground, where two cup and ring stones have been found. From thence the party walked to the riverside, through an avenue of Yews known as the Green Drive, and reached an artificial island, where were seen some remarkably fine specimens of old Holly trees. Measurements were taken of two logs from a recently felled tree, and the diameter was sixteen inches and there was twenty-nine cubic feet of timber. The Ash Wood, near the West Lodge, was then visited, and here was seen a ten year old plantation of Douglas Fir. Near the castle were seen some great trees. One, a splendid Sycamore, girthed thirteen feet breast-high and measured twenty-nine feet high to the first branch. Its cubic contents were estimated at 276 feet. Another fine specimen was *Abies nobilis* and contains over 300 feet of timber. Much interest was taken in two London Plane trees, which are practically unknown in the North, and which are usually associated with the South of France. Both specimens appeared in a very healthy condition.

Spring Flower Show at Glasgow, 1926.—The great increase in the culture of spring-flowering bulbs which is evident at the present time, has induced Messrs. Austin and McAslan to arrange a two days' show which is to be held in the McLellan Galleries on March 31 and April 1, 1926. An attractive schedule of fifty-eight classes in large-flowered, miniature and multiflora Hyacinths, Narcissus, Tulips, Jonquils and Azaleas, has been prepared, and a special prize of three guineas each is offered for the best exhibit in the show by a gardener and an amateur. With the exception of one or two classes in each section, which are confined to amateurs in Glasgow, the competition is open to all customers of the firm.

St. Donat's Castle.—St. Donat's Castle, Llantwit Major, Glamorgan, has been sold to Mr. W. R. Hearst, the famous American Newspaper proprietor. Mr. Hearst is sixty-two years of age, and intends to live in England for two or three months each year.

The Tamar Valley Strawberry Crop.—Owing to the almost unparalleled drought, this year's Strawberry crop in the Tamar Valley which is a very important fruit growing district in the West, was almost a complete failure, and the growers met early this week to consider the best means of applying to the Minister of Agriculture for financial assistance.

The Fruit Crops.—As our annual reports on the fruit crops throughout the British Isles have shown, the crops generally were distinctly "under" this year. Since the returns were made severe storms have visited various parts of the country, especially the North, Midlands, and the West, with ill-effects in the case of the mid-season and late varieties of Apple and Pear, so that the already short crops are, unfortunately, further depleted.

Fruit and Vegetables Exposed for Sale.—Inquiries are being made by the London County Council Public Health Committee as to dangers to health arising from the manner in which fruit and vegetables are exposed for sale, and a reference has been made to the Ministry of Health. A proposal is that the committee should seek an extension to this produce of the order prescribing conditions under which it may be exposed or offered for sale so as to prevent contamination.

Lightning and Oak Trees.—Investigations made by the State College of Agriculture at Ithaca, U.S.A., tend to confirm the opinion long held in this country that Oak trees are more often struck by lightning than any other species. The *National Nurseryman* records that: "Studies made in a 40,000 acre German forest of all the trees struck by lightning show that Oak trees were struck most frequently, and after them in order came the Elm, Chestnut, and the Pines. The

Beech, Birch, and Maple were almost never struck." The reasons for the greater likelihood of Oaks being struck are (a) their height, (b) that they usually grow in loamy or sandy soil, on which trees are most often struck, (c) the Oak is a starchy tree, which makes a better conductor of electricity than an oily tree, such as the Beech, and (d) the Oak is a tap-rooter with a root system going deep into the soil. In the forest under observation the percentage of "hits" varied according to the soil as well as the kind of tree, and the records were twenty-six per cent. for loam, twenty-four per cent. for sand, and nineteen per cent. each for clay and prairie soil.

Gardener Killed by Lightning.—On Monday last Mr. Harry Warland, a gardener of Hambledon, Cosham, Hampshire, was killed by lightning at Chesterton, near Bicester.

Fruit Growing in Warwickshire.—According to a Report issued by the Warwickshire County Council fruit growing is extending in the county, principally in the direction of planting bush trees on cultivated land, because the results obtained have shown



FIG. 62.—MEDAL OF THE SOUTHPORT FLOWER SHOW.

(see report on p. 177.)

conclusively that under that system early returns, regular crops, and the highest possible percentage of first-grade fruits may, with skilful management, be secured. The principal developments have taken place around Stratford-on-Avon, Salford Priors and Bidford-on-Avon, but around Leamington, Warwick, Rugby, Birmingham, and Polesworth, plantations of considerable size have been established. Some of these have already proved very successful, and others promise to achieve similar success.

Dahlia Show in New York.—At the ninety-fourth exhibition of the American Institute the American Dahlia Society will co-operate in what is expected to be the largest agricultural and horticultural show ever held in New York City. The Armoury of the 104th Field Artillery will be used from September 20 to October 2. In addition to Dahlias, which will be the chief feature, provision has been made for the exhibition of all other seasonable flowers.

Naphthalene and Red Spider.—In reply to a correspondent who asked for a reliable means of controlling red spider on his Carnation plants, the current issue of *The Covent Gardener*, published by Messrs. George Mcnro and Son, Ltd., recommends the method advocated by the Lea Valley Experimental Station, which is by the use of a special grade of naphthalene known as No. 16, because it passes through a sieve of sixteen meshes to the inch. The naphthalene must be volatilised, and it is essential to have the house very wet. One grower sprayed more than one thousand gallons of water over the plants, paths, and glass of a house of 20,000 cubic feet. The quantity of

naphthalene used was six ounces per 1,000 cubic feet. The temperature of the house was between 70° and 80° Fahrenheit, and the naphthalene was vaporised by means of special lamps capable of volatilising the necessary amount of naphthalene in twenty-four hours. If the infestation is severe, it may be necessary to repeat the fumigation, but the experience of Carnation growers is said to prove conclusively that a fumigation with naphthalene No. 16 at the prescribed rate and under the conditions above stated, will completely clear houses of red spider.

Cost of Small Holdings.—The report issued by the Select Committee on Estimates states that there will be an approximate loss on Land Settlement Schemes for ex-service men of £9,500,000 by March, 1926. The cost to the country of these Small Holdings is about £38 per acre, or £550 per tenant. The report also states that the Ministry appears to be "greatly perturbed" at the losses on a profit-sharing farm at Patrington, Yorks, and expresses the decided opinion that the House of Commons and the country should know the cost to the taxpayer of the scheme.

Appointments for the Ensuing Week.—Tuesday, September 1: Royal Caledonian Horticultural Society's meeting; Royal English Arboricultural Society's meeting (4 days); Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, September 2: Royal Agricultural Society's Council meeting; National Viola and Pansy Society's meeting. Thursday, September 3: Nottingham and Notts Chrysanthemum Society's meeting; Daly Flower Show. Friday, September 4: London District Allotments and Gardens Show (two days) at Royal Horticultural Hall; Alloa Flower Show (two days); Cleland Flower Show. Saturday, September 5: Blackburn and District Horticultural Society's Meeting and Lecture; Bearsden Flower Show; Cambuslang Flower Show; Cambusnethan Flower Show; Coldstream Flower Show; Crieff Flower Show; Dalkeith Flower Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—Amusement for the Agricultural Poor.

According to my expressed determination last year, I am making arrangements for a village excursion to Ipswich and Landguard Fort; having received assurance that we shall be welcomed at both those places. The successful issue of such an excursion (provided no untoward accident should occur), will mainly depend upon a general attention to a few rules, which I here propose to those who wish to accompany me. Every one is to be in good humour, accommodating towards all, and especially attentive to the ladies of the party. If the weather should prove unpropitious, every one is to make the best of it, and not to complain more than he can possibly help. Those who are invited on the present occasion are the occupiers of farms in Hitcham, the resident members of the Stoke and Melford Club, and those who attend the adult class on Saturdays. Every one who joins the party may also name a friend residing in Hitcham, for whose good conduct he will be responsible. The tickets to be issued will be limited to two hundred, at 1/6 each. . . . As the object of the party is not to be mere eating and drinking but wholesome recreation to body and mind, the refreshments provided will consist of bread, cheese, butter, cake, with lemonade, and one or two pints of beer for those who may apply for an order to that effect when they receive their tickets. These orders for beer are not to be transferred to other parties; and if not needed are to be returned. Should any one be prevented at the last moment from joining the party, 1/- of the money paid will be returned; and the remaining 6d. will be appropriated towards the expenses that will have been incurred, upon the supposition that such person would have been of the party. Every one must contrive for himself how to get from Hitcham to Stowmarket, and back again. If he is not able to persuade anyone to give him a lift, he must consent (as others have done before) to wear out a little shoe leather. J. S. Henslow, *Gard. Chron.*, August 31, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart., Gatton Park, Reigate.

Coelogyne pandurata.—This Orchid is not difficult to cultivate if provided with a warm, moist atmosphere during its growing period, and given a decided season of rest. The plant has a rambling habit and the pseudo-bulbs are produced at intervals on a stout rhizome, for which reason it is best placed in a long Teak-wood basket. The rooting medium should be of a rather coarse nature, and consist of good *Osmunda* fibre and a little *Sphagnum* moss made porous with a sprinkling of crushed crocks. The best time to re-basket or top-dress the plant is a few weeks after the flower spikes are removed, and directly root-action is evident. The flowers of the hybrid *C. burfordiense* are very similar in colour and shape, but the plant possesses a rather more compact habit of growth and a more robust constitution than the species; it may be grown in an ordinary flower pot.

Coelogyne of the Massangeana section.—When well grown, the three species *C. Massangeana*, *C. asperata*, and *C. Dayana* are very attractive Orchids, and are distinct from other members of the genus. The habit of flowering of each species is very similar, the plants usually producing long, graceful racemes of blooms. The most suitable time to re-pot them is in the early spring, when they first show signs of starting into growth afresh, but they should never be subjected to root disturbance unnecessarily. They should be afforded good-sized receptacles and ample drainage. Pans should be used to permit of suspending the plant when in flower. Well-established specimens require copious supplies of water during their growing season, but in winter, when at rest, they should be given only just sufficient moisture to prevent undue shrivelling of the pseudo-bulbs.

Coelogyne cristata.—Plants of *Coelogyne cristata* are making rapid growth and will need plenty of water at the roots, whenever the compost shows signs of being dry. An occasional watering with weak liquid cow manure will also be beneficial. Specimens that have been re-potted recently should be watered rather sparingly until the new roots have become established in the compost, and the surroundings of the plants should be kept moist. These conditions should be maintained until the pseudo-bulbs are matured.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN, Pyrford Court, Woking, Surrey.

Polyanthuses.—These are amongst the most useful of spring flowering plants, and seedlings grown for this purpose should be assisted by good cultivation to make strong specimens before the bedding-out period arrives. They are also grown frequently in bold masses in the margins of shrubberies, where they make a most effective display, and where this is intended the sites should be prepared by forking in a liberal dressing of decayed manure.

Pentstemons.—The finest display of *Pentstemons* is obtained from two-year old plants, and where it is possible to winter them in the ground, the flowering is very effective in the second year. It is always wise, however, to raise a stock of young plants, and cuttings may be inserted in cold frames from now onwards.

Hardy Annuals.—Autumn-sown annuals do particularly well on light soils, and generally produce stronger plants and more flowers than spring-sown plants. They often fill a blank after the early flowering bulbous plants have passed their best, by providing the garden

with masses of brilliant and varied colours. Many of them are also invaluable for furnishing cut blooms in the early spring, and for this purpose quite a long season of supply may be maintained by making autumn and spring sowings. Amongst the best adapted for present sowing may be mentioned *Alyssum maritimum*, *Asperula setosa* azurea, *Bartonia aurea*, *Calendula officinalis*, *Centaurea Cyanus*, *Chrysanthemum inodorum* plenisimum, *C. segetum* grandiflorum, *Clarkias*, *Collinsia bicolor*, *Coreopsis tinctoria*, *Erysimum Perofskianum*, *Gilia tricolor*, *Godetias*, *Eschscholzia*, *Limnanthes Douglasii*, *Shirley Poppies* and *Sweet Sultan*.

The Rock Garden.—By far the majority of rock plants have finished their flowering by midsummer, so that the comparatively few late-flowering subjects are much appreciated. The *Gentian* family provides us with a few good late-flowering plants, not the least beautiful being *G. asclepiadea*, which puts forth its lovely blue blossoms during August and September. In a cool, moist situation it grows and flowers freely. *G. sino-ornata*, a still comparatively rare plant, yet one of the loveliest of its class, and *G. Farreri*, a plant of similar habit, are both valuable late-flowering species. *Silene Schafta*, a charming little plant of very easy culture, and *S. californica*, needing a sheltered position, are usually in flower throughout August. *Eleocharis missouriensis* is a delightful Evening Primrose, which asks only for a sunny position, and seldom fails to give a continuous supply of its Primrose-yellow flowers during August. Several of the *Campanulas*, *Linarias*, and *Sedums* are showy during August and September, whilst *Crucianella stylosa*, *Papaver alpinum*, *Plumbago Larpentae*, *Tunica*, *Saxifraga*, and *Zauchneria californica* are all valuable late-flowering subjects.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLFORD, Westonbirt, Gloucestershire.

Bulbs.—Provided that orders were placed in good time, the main consignments of Dutch bulbs should be coming to hand shortly, and it will be well to put forward the work of mixing composts, preparing pots and boxes, also preparing a site for the reception of the bulbs after they are potted, and materials in which to plunge the pots. This work will greatly facilitate the desirable object of getting the bulbs potted up so soon as possible after receiving them, and which, in the case of most, is of much importance. On receiving the bulbs they should at once be turned out of the packages and material in which they have been packed for transit. Lay them out thinly, on shallow fruit trays for preference, and place them in an airy store-room or on the shelves of the fruit room until they can be potted.

Potting Compost.—It is advisable to prepare at one mixing, if possible, sufficient materials calculated to provide for the potting of the whole of the bulbs to be dealt with. For *Hyacinths* and *Tulips* the soil from old Melon and Cucumber beds will provide material for a good compost, particularly when good fibrous, turfy loam has been added. The loam will be in a mellowed state, and may easily be rubbed through a half-inch meshed sieve. Two-thirds of the loam to one-third of the old hot-bed manure sifted through the same riddle with some fine charcoal, a free addition of sharp sand, and a sprinkling of soot, should form a suitable compost. *Narcissi* do not require a rich soil, at least, it should not be rich in organic manure. Good, fibrous loam two-thirds, one-third of good leaf-mould, some fine charcoal and coarse sand will suit the *Daffodils*. A sprinkling of good bone-meal, of medium grade, may be added. This will become available for the plants by the time the roots are at a stage when feeding will be beneficial.

Plunging Materials.—The best medium for this purpose is granulated peat moss, which

may be obtained from most sundriesmen, and is inexpensive. The pots containing the bulbs should be stood on a firm ash bottom. If frames with covering lights are not available a skeleton frame may be made with rough boards of sufficient depth to allow for the pots and the covering material, over which may be placed spare lights, or, failing these, sheets of corrugated iron to ward off heavy rains.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Supporting and Protecting heavily-cropped Standard Trees and Bushes.—Standard trees that are bearing heavy crops need their branches supported, and this is best done by securing them to props before the autumn is far advanced. If staking is neglected, the trees are often injured by rough winds, especially when the boughs are heavy with fruit. Bushes carrying large crops may be supported by stakes driven into the ground and the outside branches tied to them with strong string. In some cases, cords tied to the smaller, fruiting branches and fastened to the strong upright growths in the centre will suffice, but this must not be overdone or it will prevent the fruits in the inner parts of the tree from getting plenty of light and air, which is essential to colouring and ripening them. Where the fruits are swelling to a large size they should be made secure to the tree by tying at the stalks. In the case of Pears, a loop made with raffia around the stem and fastened to the branches will hold them quite safely. For supporting the larger Apples I use Melon nets which are very easily placed in position, and their use entails less time than tying with raffia. These nets are not expensive, and with care will last for many years.

Autumn Feeding.—At the time of writing there is plenty of moisture in the ground, but should a week or two of dry, sunny weather occur, feeding the trees with manure water will be necessary, especially on light soils; on heavy soils this attention will not be quite so pressing.

Peaches and Nectarines.—The mid-season varieties of these fruits are ripening, and should have attention by pulling the leaves on one side to expose them to the sun. Where the fruits are much hidden by the foliage use laths nine inches to twelve inches long, putting these at the back of the fruits to expose them. Remove all lateral growths, leaving one or two buds at the base of each. Examine the borders to see if moisture is required, and if found to be necessary, give the soil a fairly liberal amount of manure water, but judgment must be exercised in this feeding if the weather is changeable. Nectarines at this stage should not be given too much moisture at the roots, for an excess would cause the fruits to crack.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Forcing Strawberries.—When the plants have recovered from the disturbance entailed in potting them and are rooting well, it will be advisable to stand them in single rows on boards in an open situation to thoroughly ripen their crowns. Watering should be done carefully and at least twice a day in dry weather. Keep the pots free from weeds and cut off any runners that may appear. When the pots are filled with roots water the plants with weak liquid manure on frequent occasions. Should the soil lack lime water it occasionally with lime water. This will not only keep the soil free from worms but prove of great value to the plants.

Melons.—Continue to pollinate the latest fruits, and endeavour to hasten their development. Owing to the shortening days, Melons will take longer to come to maturity than

hitherto. Two fruits will be enough for each of these late plants to carry; these fruits are greatly esteemed in some establishments for shooting parties, and will greatly assist a shortening dessert list during the late autumn, and especially if Plums are a light crop. The water pipes should be warm every night, no matter how hot the days.

The Hot-Water System.—During the next few weeks the heating apparatus should be put in proper working order before frost arrives. Leaky boilers and pipes and repairs of any description should be attended to. The boilers should be washed out so that every thing will be in good working order for the winter. It is also a good plan to complete all the outside painting in fine, dry weather, leaving any inside painting until the crops are cleared and the foliage has fallen.

Red Spider.—Everything should be done to keep the foliage of resting trees free and clear of red spider. This pest causes much more damage than most growers imagine; to grow good fruit indoors with this pest present is impossible. Flowers of sulphur is the best remedy.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Onions.—Some of these plants are showing signs of ripening off, and such should be lifted on a dry day and thoroughly dried off, either outside or under cover, according to weather conditions, before they are stored in their permanent quarters. The bulbs should be lifted carefully to prevent bruising or damaging them. Any bulbs that are defective from any cause whatever, and those with thick necks, should not be stored, but placed on one side for use as required.

Brussels Sprouts.—Examine all beds of Brussels Sprouts and see that all plants are secure against strong winds, that may be expected before long. If necessary, and time can be spared for the operation, it is well worth the trouble to place supports to the taller-growing varieties. All Brussels Sprouts, whether dwarf or tall, should have had soil drawn up to the stems earlier in the season; this will materially help to support the plants, and keep them growing in an upright position.

Globe Artichokes.—The crop of Globe Artichokes having been cut, the plants should receive attention. Cut away all flowering stems and decayed leaves as no useful purpose will be served by allowing these stems to remain until the beds are top-dressed and finally cleaned.

Rhubarb.—Beds of Rhubarb should also be attended to, cutting away all decaying and dead leaves. Give the soil a liberal top-dressing of rich, heavy farmyard manure.

Tomatoes.—Outdoor Tomatoes have made rank growth during the showery weather of late. It will greatly assist in the ripening of the fruits if some of the foliage is cut away from around the trusses to admit as much sunlight as possible.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Hardy Fuchsias.—Such hardy Fuchsias as *globosa*, *F. gracilis*, and *F. Riccartonii*, now in full bloom in the garden, may, if desired, be easily increased at this period by inserting cuttings, preferably with a heel of old wood attached. Place the cuttings around the edge of a pot or in a box filled with soil of an open texture. Keep the frame close and shaded, but admit plenty of air when roots have formed.

A well-ventilated cold frame is the best place for the rooted plants until they are set out in their permanent quarters in early spring. I would, however, advise those whose gardens are situated at altitudes of three hundred feet above sea-level and more than forty miles inland, to treat these Fuchsias after the manner of herbaceous plants and cut them over each autumn, and in the bleak districts afford the roots protection by pegging Bracken Fern or straw over them. Hardy Fuchsias need plenty of sunshine and revel in rich soils; therefore, if the ground is not naturally rich it should be made so by the cultivator.

Bulbs.—These may now be planted in grass, and where the Narcissi bulbs that were forced last spring have been saved for this purpose, the present is a most suitable time for planting them. Scatter the bulbs irregularly on the grass and plant them where they fall. Forced bulbs planted in grass may not bloom in their

PUBLIC PARKS AND GARDENS.

THE new flower bed at Greenwich Park (Fig. 63), in front of the Royal Naval Hospital School has created a bright feature in what was formerly one of the least interesting parts of this fine open space in the south-east of London. At the time when the scheme was projected, it was predicted by many that it would be difficult to prevent mischievous persons from damaging the flowers, etc., but so far from this being the case those who frequent this end of Greenwich Park appreciate the brightness of the flowers and have given no trouble whatever to the authorities. The border is in a sunk portion of the ground, and although it does not show in the illustration, there is a grass bank with a gravel path facing the border, so that the full beauty of the latter may be enjoyed by visitors from the pathway. The principal subjects planted are *Antirrhinums*

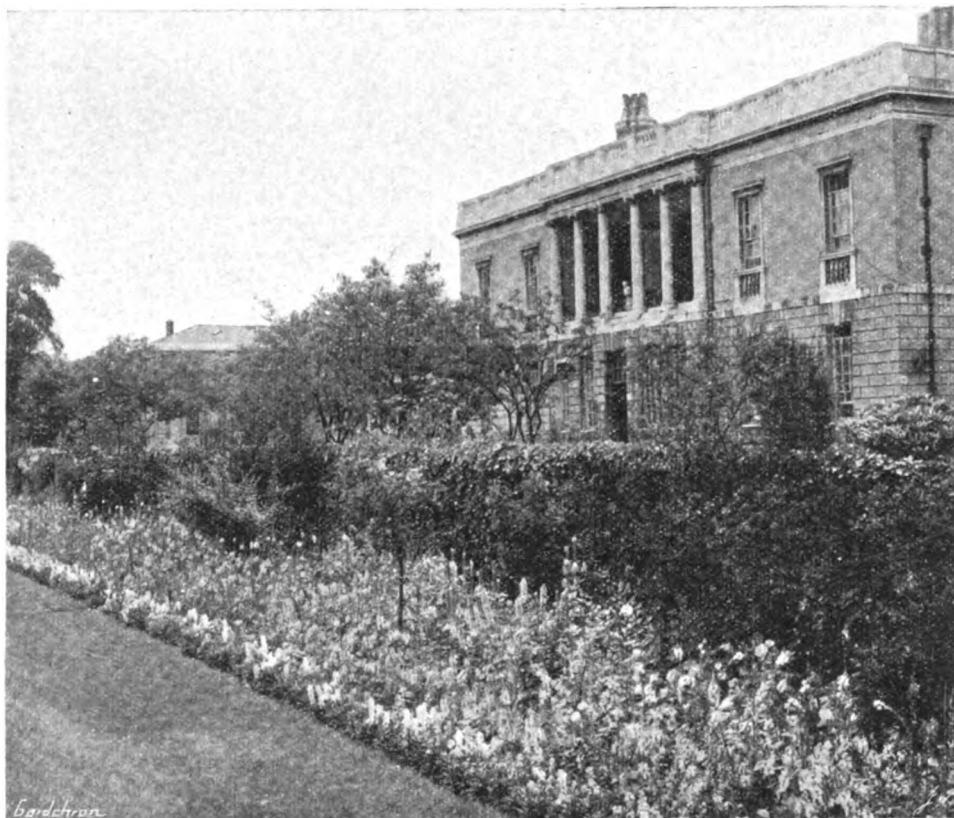


FIG. 63. THE NEW FLOWER BORDER IN GREENWICH PARK

first year, but in a few seasons such varieties of Narcissus as *Golden Spur*, *Emperor*, *Empress*, and *Madame de Graff* will flower freely, and increase in numbers.

French Beans.—The season is approaching when it will become increasingly difficult to supply French Beans from the open, and as supplies of culinary Peas begin to dwindle, it becomes more than necessary that a good crop of French Beans be maintained to supply the kitchen requirements. For growing under glass I would strongly recommend the climbing French Beans; these, if sown on a spent Melon bed or on a bed that has been occupied by Cucumbers earlier in the season, will, if planted now, give good results during the winter, and are easier managed than the dwarf Canadian Wonder type that needs to be grown in pots. Sutton's Tender and True and Princess of Wales are excellent varieties and most suitable for indoor cultivation.

and Dahlias, with a front row of *East Lothian Stocks*. This new flower border was undertaken to provide work for the unemployed, and, beside the flower border, several beds of *Roses* have been made in the grass on the other side of the path, the complete scheme constituting a fine addition to the amenities of the Park.

THE Urban District Council of Clacton is applying for sanction to borrow £4,330 for the purchase of about twenty-four acres of land for a recreation ground.

THE family of the late Mr. Thomas Dowsett, J.P., the first Mayor of Southend, Essex, has presented Southchurch Hall and five acres of land to the Borough of Southend, for the purpose of a public park. The hall, which is considered to be six hundred years old, is to be used as a library, museum, and for scientific purposes.

It is ideally situated, well within the confines of the Borough, and commands a delightful view of the Thames Estuary. A moat surrounds the Hall, and the grounds are enclosed by ancient earthworks, supposed to be of Roman origin. It is considered that in the very early future there will be fully five thousand residents in the vicinity so that this magnificent gift is especially acceptable, as the neighbourhood does not possess a public park. Southchurch Park, half-a-mile or so distant, is purely a recreation ground where games are well-catered for, so it is the intention of the Town Planning Committee to develop the surroundings of Southchurch Hall with suitable old-world gardens. There is abundant natural water on the estate so that the provision of water falls with appropriate planting would be an easy matter. The oldest parts of the Hall is timber-built and mostly in sound condition, while some portions have been covered with plaster and papered. But it is hoped to eventually restore the whole of the building to its former condition.

On Saturday, the 22nd inst., the dedication took place of over eighty acres of land comprising Castle Head, Cockshott Wood, and Crow Park, Keswick, which has been bought and presented to the National Trust for Places of Historic Interest, etc., by Sir John and Lady Randles, of Bristowe Hill, Keswick. The deeds were handed to Viscount Ullswater, honorary Vice-President of the National Trust, in the presence of a large company.

The land thus acquired for the nation's use and enjoyment is a typical piece of lake scenery which can hardly be too warmly praised for its wild beauty. It affords unrivalled views of valley, mountains and lakes, and Lord Ullswater, in accepting the deeds, said it was not surprising that there should be an accumulation of national property in that the most beautiful part of England. He urged the public to protect the land from defacement by litter and from every sort of damage, and impressed on all who might picnic there the duty of leaving each beauty spot as lovely as they found it.

BOG GARDEN.

ASTILBE HYBRIDA CRISPA.

THESE hybrid *Astilbes* comprise a useful group of hardy herbaceous, moisture-loving plants, totally distinct from the tall-growing and well-known species and varieties found in many gardens. They are the result of crossing the type with the taller garden forms. The dainty plants form close-tufted, dark green, crimped or crested foliage, reminiscent of bunches of Curled Parsley, and not more than three inches high, from which arise small bluish, pink and rose-coloured flowers.

The habit of the plants is quite distinct from that of any other member of the genus *Astilbe*.

The following forms are admirably adapted and very desirable for planting in rockery pockets, or on the margins of Water-Lily ponds, and other boggy situations. They are perfectly hardy, may be propagated by division, and planted autumn and spring.

Astilbe hybrida crispa Daumling, is a variety with dense, crisped, dark green foliage, deep pink flowers, passing off to bluish-white.

Astilbe hybrida crispa Gnom has clear pink flowers, and a neat, branching habit.

Astilbe hybrida crispa Kobold, forms a dense, close tuft, and has miniature, pyramidal spikes of bright rose flowers.

ASTILBE SIMPLICIFOLIA HYBRIDS.

THIS is another interesting and desirable dwarf-growing group of *Astilbes*, the result of crossing *A. simplicifolia* with *A. Arendsii*, producing plants intermediate in habit of the parents, whilst retaining the floriferous quality of *A. Arendsii*.

The graceful sprays of flowers are freely produced in shades of white, flesh pink, and bright rose, which almost hide the close, com-

pact bushes of fresh green foliage. The plants grow about fifteen inches high. They may be propagated by division, and planted in autumn and spring in a partially shaded and moist situation. Their flowering season is July and August. *Astilbe hybrida simplicifolia alba* produces elegant sprays of large, feathery plumes of delicate blush-white flowers; it is remarkably free in flowering. *Astilbe hybrida simplicifolia carnea* has large, loose, erect plumes of flesh pink flowers, produced well above the foliage; it is a very striking plant. *Astilbe hybrida simplicifolia rosea* has pyramidal sprays of bright rosy-pink flowers, freely produced. *W. Logan*.

HARDY FLOWER BORDER.

HEMEROCALLIS.

HEMEROCALLIS flava was introduced during the sixteenth and seventeenth centuries, but not until the twentieth century was much improvement effected in the plant by florists. The late Sir Michael Foster gave us some sterling varieties, and later Mr. George Yeld and Mr. Amos Perry have contributed such varieties of outstanding merit that the older varieties will in a very short time be quite obsolete.

The Day Lily has been accredited as being of no use as a cut flower; whilst admitting that the individual blooms are only of one day's duration, the newer hybrids are well-furnished with lateral buds, and when cut and placed in water, the succession of opening buds will provide a decoration over ten days. Associated with double *Gypsophila* and *Statice latifolia* they are especially effective, these flowers helping to hold the spikes of *Hemerocallis* in position.

As border plants, for planting on the verges of shrubberies, or along carriage drives, the Day Lilies are supreme, their foliage lasting in good condition for quite a long time, and when in bloom from May to August, their magnificent Hippeastrum-like flowers light up the garden.

The plants are not fastidious as to soil, but they succeed best in a free, open, loamy soil, with plenty of moisture, but free drainage. They should not be disturbed too frequently, those growing in partial shade last longer in flower than those exposed to the full rays of the sun.

When planted by lakes, streams, or water-Lily ponds they create a most pleasing effect. A few of the newer hybrids are worthy of a place in the herbaceous border; they flower later (from June to August) than the older sorts, and the flowers are larger, many being deliciously scented. Those specially attractive are:—*Gold Standard*, a variety with very broad, and full, deep canary-yellow flowers that are deliciously scented; the plant is very free in blooming, and grows two-and-a-half feet tall. *Gold Imperial* is a rich golden orange variety with broad petals that are prettily waved or crinkled; July; two-and-a-half feet. *Chrysolora* has extremely large, open, bright canary or primrose flowers; July; two-and-a-half feet. *Maggie Perry* is a cross between *H. fulva* and *H. cypriana*, remarkable for its large flowers, of a rich terra-cotta bronze, with a conspicuous Primrose bar or midrib, and rich golden-yellow base, which quite illuminates the whole flower; July and August; three-and-a-half feet. *Lady Fermoy Hesketh* is a cross between *H. Thunbergii* and *H. citrina*. It has bright canary-yellow self, long trumpet-shaped flowers; July; three feet. *George Yeld (citrina x fulva)* has large, bold, upright flowers, with broad petals of a rich orange-bronze suffused yellow, the inner petals being narrow and of soft Apricot colour; July and August; three feet. Sir Michael Foster has extremely large flowers fully six inches long; the broad overlapping petals are clear yellow; June and July; three feet. *Apricot* has medium-sized flowers which are produced very freely. The colour is rich Apricot yellow; two-and-a-half feet; May and June. *May Queen* is a large, clear orange variety, flowering in May; height two-and-a-half feet. *W. Logan*.

DIERAMA PULCHERRIMA.

THERE is nothing of its kind in the whole course of the season that excels the grace and elegance of this South African plant during its flowering period, which may extend from early July to autumn. The tufts of grassy leafage, fine and glaucous, are distinctly attractive, but when the slender four to six-foot stems rise above the plant, and, bending over in a graceful sweep, bear at their drooping extremities the loose shower of large, purple, pink or white bells, the effect is singularly beautiful. The arching wands are, moreover, in spite of their fragile appearance, as tough as whalebone, a fact which renders the plant infinitely more satisfactory for the average garden than it would ever be were it less wind-proof.

D. pulcherrima appears to be the correct name for the type species, though some lists call the crimson-purple one *D. pendula* and give the rose-pink kind the former name. However that may be, there is no doubt that imported seeds from wild plants will give specimens in as lovely a rose-pink (quite the best form) as any home-raised variety that I have seen.

Stock may be easily and quickly produced from seeds, which are yielded abundantly, and as *D. pulcherrima* resents disturbance the plants should be put in their permanent positions when quite young, or moved carefully from pots. A well-drained good loam in full sun is all these plants require. They are not fastidious once established, but prefer a soil that is naturally cool to one that is apt to dry out in summer. If the bed is raised a trifle so much the better, and *Libertias*, *Iris*es, or other suitable subjects may be grouped with them. *J.*

ALPINE GARDEN.

GENTIANA PURDOMII.

A NEW Asiatic *Gentian* is always somewhat of a gamble, for so many come to us with high-sounding names and then turn out to be utterly dowdy. But a *Gentian* named after the late Mr. Purdom one might well expect to be a first-rate garden plant, and certainly *Gentiana Purdomii* lives well up to the name it bears. I have had it now for three seasons, and its beauty and general garden merit this year are causing me to wish very much that I had taken steps to increase my stock to several thousand instead of allowing it to stand at a dozen or so plants.

I have planted *Gentiana Purdomii* on a sunny slope of the the rock garden in ordinary full loam rather on the heavy side. There it makes a flattish, close-lying rosette of narrow, glossy leaves, from which radiate eight or ten trailing perfectly prostrate flower stems, slightly branched, and each carrying a dozen or so upturned flowers. These are of goodly size and extremely handsome, brilliant violet-blue and freckled with tiny white dots.

This *Gentiana* reminds me somewhat of *G. Kurroo*, but to my mind, it is a vastly superior plant; larger and ampler in every respect, easier to grow, freer flowering, and the colour of the flowers instead of the rather chalky Periwinkle blue of *G. Kurroo* is magnificently telling and vivid. If the plant is as easy to propagate as I suspect it is, and if it flourishes in other parts of the country as easily as it does here, it should soon become an extremely popular and valuable rock-garden plant.

As to propagation I do not foresee any difficulty. I have heard of its seedling freely elsewhere, and see no reason why it should not seed here. In my comparison of *G. Purdomii* with *G. Kurroo* I do not intend any injustice to the latter species. It was a plant which I grew with difficulty, admired greatly—and lost: Who has it now? At Chelsea Show this year Mr. Hyatt Baker, its introducer, asked me if I knew where he could get it, and I could not remember having seen the plant for many years. *Clarence Elliott, Stevenage*.

BULB GARDEN.

LILIUM BAKERIANUM

As Lilies go, *L. Bakerianum* (Fig. 64) is comparatively new to western civilisation. Delavay was the first European botanist to report the discovery of the species, which he found in Yunnan in 1887, but his discovery was not known till 1892, when Franchet* described Delavay's plant, and named it *L. yunnanense*, unaware that it was synonymous with the Lily General Collett had found in the Shan States in 1888. This Burmese Lily was named *L. Bakerianum* by Collett and Hemsley† and the flowers were described by them as upright. The fact however, that with this solitary exception, no true Lily with erect flowers has been reported from Burma before or since, leads to the conclusion that some confusion must have arisen in regard to Collett's original specimen; it is possible that when the specimen was mounted the flowers were set in an upright position, which misled Messrs. Collett and Hemsley into regarding this as the normal position. The erect flower led to further confusion as it induced the describers to regard the species as intermediate between *L. davuricum*, Gawl., a species with upright flowers, and *L. japonicum*, Thunb., a true Eulirion. There is a possibility, however, that the erect position of the opening bud, referred to below, may have some bearing on the point.

Messrs. Low and Co. were the first to introduce the species to cultivation, for they flowered it in 1891 from bulbs collected for them in the Shan States by W. Boxall. Baker named this plant *L. Lowii*,‡ and at that time did not appreciate the fact that it was synonymous with *L. Bakerianum*, which had been described a year before. The upright position of Collett's original specimen again no doubt misled Baker, for in describing *L. Lowii* he differentiated it from *L. Bakerianum* because, among other points, the latter had an erect flower! This is a capital example of the "side-tracking" of a competent investigator, by the simple alteration of the position of a flower in the process of drying and mounting the specimens of which the flower forms part. In 1904, Messrs. James Veitch and Sons distributed bulbs received from Mr. E. H. Wilson, who was then exploring Western China for them, and since then the species has made spasmodic appearances. So far, however, it has not proved itself a Lily for garden cultivation, and as the bulbs offered from time to time by trade growers are of Burmese origin there is nothing remarkable in that. But in the case of a plant with such a comparatively wide range, there is always the possibility that some of the Chinese forms may be hardy, and should that prove to be the case, a lovely addition will be made to the available stock of garden Lilies.

In 1920, Sir F. Moore, then Director of the Royal Botanic Garden at Glasnevin, flowered the species in the open from seed collected by Lady Wheeler Cuffe in 1916 in the Upper Shan States under the name "Loilem Lily." A point noticed by Sir F. Moore about these plants was that the flower bud and the opening flower were erect and then, bending over, the flower assumed the almost horizontal poise typical of *L. Bakerianum*. Later on, the ripening capsule gradually assumed the vertical position characteristic of the genus, completing the cycle from the upright bud to the horizontal flower and then the vertical capsule. E. H. Wilson gives§ the species "a wide latitudinal distribution, having its northern limits a little east of Tachien-lu, in Szech'uan province, and its southern in the Shan States; its eastern limit is round Mengtze in the southern part of Kueichow province. I did not see it in Yunnan but east of Tachien-lu, at between four thousand and six thousand feet altitude. I found it in plenty on steep slopes among shrubs and grasses in loam overlaid with leaf-soil of good depth. Only the flowers show above the neighbouring plants, and when out of bloom it is

difficult to find It is a stem rooting Lily, and the bulb is usually down about six inches; the underground part of the stem wanders somewhat before it appears above ground." Incidentally the creeping stem has not been recorded among plants grown in this country.

Wilson regards *L. Delavayi*, Franchet* as a form of *L. Bakerianum*†, but Forrest, whose experience of the plant in the field is extensive,

may be retained as a species closely allied to *L. Bakerianum*: that *L. yunnanense* is synonymous with *L. Bakerianum*, and that *L. Lowii* may be reckoned a spotted variety of *L. Bakerianum*. The fact, however, that under cultivation, both spotted and unspotted flowers are found in seedlings of *L. Bakerianum* may render necessary some modification of the latter view.

Though as yet neither *L. Bakerianum* nor

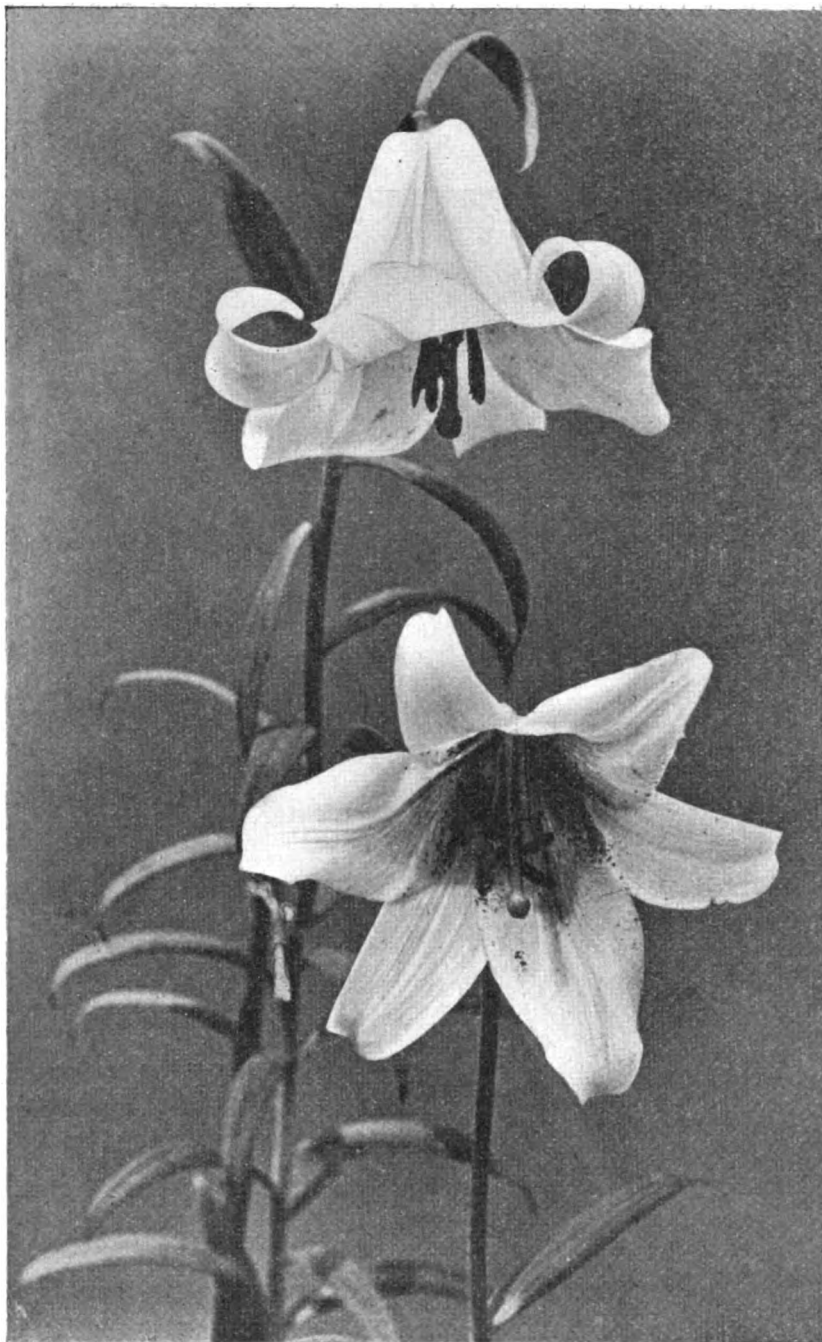


FIG. 64.—LILIUM BAKERIANUM.

R.H.S. Award of Merit, August 11. Shown by Messrs. R. W. Wallace and Co.

considers that they are distinct. He has noticed that the flowers of *L. yunnanense* are always white, sometimes tinged with rose, but there are no white flowers among Delavay's types of *L. Delavayi* or among the many specimens of the same species Forrest found in one direction or another. Forrest's experience in the field of *L. yunnanense* and *L. Delavayi* has led him to the conclusion that they are distinct. This conclusion is reflected in the view Professor W. Wright Smith has expressed‡ that *L. Delavayi*

L. Delavayi seems to be of value as a garden plant, they are distinct enough horticulturally, for the first is always white, more or less freckled with purple. *L. Delavayi*, on the other hand, so far the writer's observation goes, is never white, but olive-brown or olive-green and freckled—an unattractive colour. Lately, however, a yellow-flowered form of Forrest's finding—No. 21,578—has stimulated interest in a plant which except for the magic of the name, has little attraction for growers. This elegant yellow-flowered form has smaller and less open flowers than the typical *L. Delavayi*, and at first sight is more like a Fritillary than a Lily. A. Grove.

* *Journ. de Bot.*, vi. 314 (1892).

† *Journ. Linn. Soc.*, xviii, 138, t. 22 (1890).

‡ *Bot. Mag.*, cxviii, May, 1892, t. 7232.

§ *The Lilies of Eastern Asia*, p. 42 (1925).

* *Jour. de Bot.*, vi, p. 314 (1892).

† *The Lilies of Eastern Asia*, p. 43 (1925).

‡ *Notes on Chinese Lilies*, W. W. Smith, in *Trans. and Proc. of the Bot. Soc. Edin.*, vol. xxviii, pt. iii, p. 159 (1923).

NOTES FROM WISLEY.

THE brightest portion of the Wisley Gardens at the present time is undoubtedly that occupied by the Dahlia trial. Almost all the varieties which have attracted attention in previous seasons, as for example, Seaford, the beautiful pink, starry variety, and the single scarlet Bishop Crossfield, are flowering better than ever this year. Many new plants have been sent in, among which is a Camellia-flowered Dahlia named Sunstar, with blooms suggestive of those of a Chrysanthemum. In the Paeony-flowered section Glamour, with scarlet flowers, and Flame, which is orange-scarlet, are being grown at Wisley for the first time. Both are

In the Berberis garden which adjoins the pond, many thousands of little seedling Berberis are springing up beneath the shrubs. One of the most ornamental Berberis at the present time is *Berberis Jamesiana* (Fig. 65), which is now fruiting. The berries although apparently fleshy, have a very thin skin and are actually hollow. This is possibly the cause of their opalescent sheen. The young shoots are Plum coloured, and the foliage is beginning to assume its bright autumnal colouring. In the far corner of the field garden is a plant of *Vitis heterophylla* with its deeply cut foliage, which is scrambling over the Rhododendrons. The numerous little green flowers will soon be followed by purple berries. In an adjoining ditch is a fine plant of *Gaultheria pyrolaefolia* studded

On the rock garden *Stokesia cyanea* and *Gemm Borisii* are in flower, also *Potentilla Miss Willmott* and the dark blood red *Potentilla Thurberi*. Many blooms of *Primula Littoniana* are still to be seen, which testify to the long period over which this plant flowers. J. K. G. White.

NOTES FROM EDINBURGH.

SIGNS of the approach of autumn are not wanting, for already the Mountain Ash is decked with its clusters of shining red fruits, and *Viburnum Opulus* has its fruits approaching maturity. Nevertheless, the floral display in the Royal Botanic Garden, Edinburgh, continues to be well-maintained, for the falling off in the rock garden is compensated for in the herbaceous border.

Foliage plants show up well in the rock garden, especially those with grey foliage. They include *Santolina Chamaecyparissus tomentosa*, which has also a quantity of yellow flower heads as a further attraction. Another yellow-flowered plant is *Senecio Greyi*, a dwarf, bushy species from New Zealand. It contrasts strongly with its congener *S. stenocephalus comosus*, a native of China and Japan, whose spikes of yellow flowers are five feet tall in the herbaceous border.

Another plant which is attractive just now in the rock garden is also, like the *Senecios*, a member of the *Compositae*, and furthermore, yellow-flowered. This is *Odontospermum maritimum* which inhabits the Mediterranean regions. Its large, yellow, Daisy-like flowers are not its only distinctive features, for its leaves are covered with long, silken hairs which give the plant a downy appearance.

Turning to other plants, *Sedum Ewersii* makes a good display with its dark pink flowers. It is a native of Siberia. Elsewhere in the rock garden and also under glass, in the Rock House, the pretty pink flowers of *Cistus Warley Rose* have been much in evidence.

Two fruiting shrubs should not be overlooked. One is *Gaultheria pyrolaefolia fructu albo*, a dwarf-growing plant of spreading habit, while the other is *G. hispida fructu albo*, a native of Australia and New Zealand, taller and more bushy in growth. Both, as the varietal names indicate, have white fruits which are extremely ornamental, and are acquisitions to any rock garden.

Along the herbaceous border there are so many plants that, at first, one is bewildered, but at the present time a few stand out from the multitude as being of more than passing interest. The herbaceous border at Edinburgh contains annual, biennial and bulbous plants in addition to its strictly herbaceous inhabitants. So it comes about that *Lilium Davidii* may be found there in all the glory of its orange-red flowers. This species was introduced into cultivation from Yunnan. A well-known plant in *Rudbeckia laciniata* may be noted in several places, and also a very good *Helenium* known as *July Sun*, which reaches to a height of four-and-a-half feet. Another old plant is *Monarda didyma*, the Oswega Tea, so well described by the late Mr. E. H. Jenkins as "fragrant of leaf and brilliant of flower." One of the Sea Hollies, *Eryngium Oliverianum* is not only decorative, but its flowers appear to be a great attraction for wild bees.

During the summer, the Rose Garden at Edinburgh is much frequented by visitors, for although small, it has considerable charm. On account of its smallness only standard varieties are grown so that old varieties which the creations of modern raisers have failed to oust from popular opinion may be found. On the contrary, the most recent introductions of sterling merit may be added if space can be found for them. In the beds standard trees are sprinkled among the bush Roses with good effect. Of the standards *Hiawatha* (*Polyantha*) American Pillar (*Polyantha*), and *Excelsa* (*Wichuriana*), are at the moment the most striking. Among the bush Roses may be



FIG. 65.—BERBERIS JAMESIANA.

remarkable for their long, straight flower stems, some of which are two feet long. In the small, Paeony-flowered section, Mrs. A. Gordon is a pretty pink-flowered variety, flushed with yellow, while an attractive collette Dahlia is Lady de Bas with deep crimson flowers adorned with a white collar flushed with red.

In the field garden, the section devoted to Heaths is now very good. A plant of *Buddleia variabilis* var. *nanhoensis*, which is growing in close proximity, blends very harmoniously with the general colour of the *Ericas*.

Around the field garden pond is a good selection of shrubby *Spiraeas* belonging to the sub-genus *Sorbaria*. These have lately made considerable growth and include *Spiraea Lindleyana*, *S. arborea* and *S. Aitchisonii*. The last named, which may be seen in flower, has particularly finely-divided foliage of great beauty.

with snow white and pungent smelling berries.

Against the wall of the laboratory a plant of *Escallonia mollis* is in flower (Fig. 66), the habit of which is not unlike that of *E. macrantha*. The flowers are pale pink, and the foliage rather downy. Young plants of *Solanum jasminoides* and *Trachelospermum jasminoides* are also in flower against the building. The latter plant belongs to the Periwinkle family, and its white waxy blossoms give out a strong perfume of Jasmine. Around these climbers are plants of the Cardinal Sage (*Salvia fulgens*), whose large, scarlet flowers are rendered even more conspicuous by reason of their inflated helmet which bristles with red hairs. Another Sage in bloom is *S. officinalis purpurea* with purple leaves and bluish flowers, while plants of *Hyssop* (*Hyssopus officinalis*), of which there are blue, white and pink varieties, help to brighten the rock wall near the laboratory.

mentioned *Souvenir de la Malmaison*, a Bourbon Rose of merit, as also is the H.T. *Gorgeous*, in my opinion this Rose has a tendency to "floppiness." Madame Edouard Herriot is still one of the best Roses we have. It is interesting to note a clump of *Primula Littoniana* in flower in the Rose Garden.

Under glass, attention may be drawn to the splendid display which has been made by the orange flowers of *Mutisia decurrens*, which is a very charming plant, although, so far, it has proved difficult to propagate by cuttings. *Passifloras* and *Tacsonias* have been conspicuous features of the temperate houses for some weeks. *Passiflora coerulea*, and its varieties, including the white *Constance Elliot* were best, while of the *Tacsonias*, *T. militaris* was the most free flowering. *T. mollissima* flowered better this year, as did also the quite distinctive

appreciation as that enjoyed by the last-mentioned, now getting into more general cultivation. We have also a white form of *E. vagans*, labelled *Lyonesse*, which is much in advance of any of the older white sorts which I have seen.

E. ciliaris is so good in itself that it can hardly be improved upon, but *E. c. hybrida* is a welcome addition to its class. Assuming that this is a hybrid, one may suggest that *E. Tetralix* is the other parent, for whilst there is a noticeable likeness to *E. ciliaris* in the foliage—one of the most charming features of the Dorset Heath—the clear rose-pink bells in terminal clusters rather point to *E. Tetralix*. *E. c. hybrida* is, moreover, of dwarfer and more compact habit than the type, so that it will be welcomed for its neat growth.

In the *E. cinerea* set we have a brace of good

HOHERIA POPULNEA LANCEOLATA.

THIS beautiful New Zealand shrub is not so often seen in gardens as its merits deserve, and although of comparatively recent introduction it has been long enough in this country to have been planted extensively in those parts where its cultivation may be carried on with every hope of success.

It is a neat-growing evergreen with serrated, lanceolate leaves, and the flowers are produced in great profusion towards the end of July. The blooms are of pure, glistening white, nearly one inch across, and, being produced in freedom, the effect of a fair-sized specimen is most attractive, its shoots being wreathed in bloom for the greater part of their length.

An open, sunny situation suits this plant, and if shelter of a wall is afforded it will do

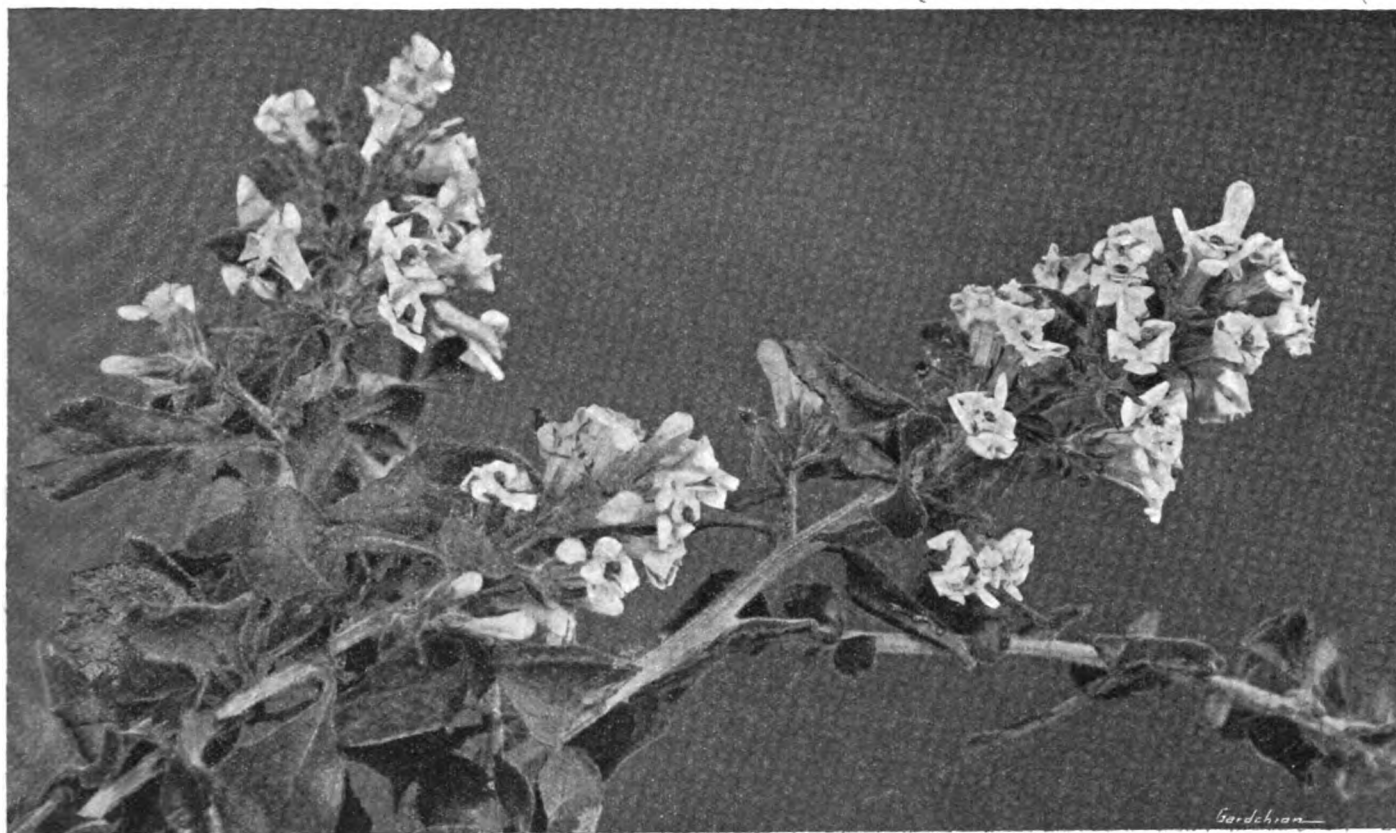


FIG. 66.—ESCALLONIA MOLLIS

(See p. 168)

T. Sutherlandii, which is one of the most pleasing of *Tacsonias*.

In the rock house, *Nertera depressa* is once again producing a quantity of the small scarlet fruits which are the most attractive features of this humble plant. Further away, *Gaultheria nummularia* carries its small, shiny bluish-black fruits, and *Dianella intermedia* has for some time borne on its slender stems its pretty blue berries. *Robert H. Jeffers*.

TREES AND SHRUBS.

SOME OF THE NEWER HEATHS.

AMONG a collection of summer-flowering Heathers of comparatively recent introduction there are a few varieties which deserve special recognition. One of these is *Erica vagans* Mrs. F. D. Maxwell, a plant with all the vigour and distinction of *E. v. St. Keverne*, but with flowers of a deeper shade of colour approaching a full-toned cerise. This variety is as free from the bluish tinge as the beautiful *St. Keverne*, and it is one that should meet with as much

plants in *E. c. Apple Blossom* and *E. c. pallida*, the former being a pale shell-pink, and the latter white with the faintest wash of rose. In both of these the flower spikes are long, the habit erect and neat and the foliage a good dark green to accentuate the colour of the blossoms. *E. cinerea* Golden Hue, has a golden-green foliage which promises to earn for this variety as much esteem as that bestowed upon the well-known *Calluna vulgaris aurea*, but our specimens of this are as yet hardly old enough to enable me to speak more definitely of their merits in gardens.

Erica Williamsii is not a new variety, but it is still uncommon and it has not thus far been much of a success with us. It is believed to be a *Tetralix* × *vagans* hybrid and bears some resemblance to both of these species, but especially to the latter.

Erica Williamsii is, however, a Heath of distinction, the dense, cushiony habit, moss-green foliage, and rose-coloured umbels being unlike those of any other. My complaint with *E. Williamsii* is that it is a shy bloomer, the flowers being not only few, but generally yielded too late in the season. But this may not be the experience of others. *A. T. J.*

extremely well, reaching a height of nine to ten feet.

Hoheria populnea was illustrated in *The Gardeners' Chronicle* as a supplementary plate in the issue for November 23, 1901. *A. T. Harrison*.

POINCIANA GILLIESII.

THIS somewhat tender shrub is a magnificent wall plant for favoured districts and is well-worth growing in a sheltered position such as a partially enclosed terrace would provide. The graceful, grey Acacia-like foliage is distinctly attractive, and the large cream-coloured flowers with tufts of brilliant scarlet stamens are very beautiful. *W. Auton*.

THYMUS ERECTUS.

Thymus erectus is an upright little bush densely clothed with pale green leaves. It grows to about one foot or more, and its compact and upright habit gives it the appearance of a dwarf Juniper. The flowers, which appear in late summer and continue until autumn, are pure white and produced in clusters at the extremities of the current season's growths. *J.*

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PLANT HUNTING ON MOUNT IDA, CRETE.

MY tent was pitched on a terrace at the south-east and on the north slope of the main ridge of Mount Ida at an altitude of about four thousand seven hundred feet, and near some drinking troughs constructed to collect the icy cold water welling out from the bowels of the mountain. It is the only source of supply for the shepherds who, during the summer months, frequent these parts; it is visited during the day by the children and women of families who seem to come from various camps with their donkeys to replenish their pitchers.

From my camp I overlooked the Plain of Nidha, one hundred and fifty feet below me: it constitutes one of the features or attractions of Crete. I was looking down on a green basin about two miles across, from west to east, as level as a cricket ground, encircled by rounded hills in front, and on each side of me the green of this lacustrine basin filling up the interstices and hollows between one hill and another. During the winter months and up to the end of April, the plain is carpeted with a blanket of snow, the waters of which, on the approach of summer, pass through subterranean channels to find outlets in the foothills of Ida. The holes are deep, and in one such place was growing a white Saxifrage in wild profusion. The plain is a great pasturage for sheep and goats, bare of all vegetation save the sheep-nibbled turf, so thick and close as to give the impression that a mowing machine had passed over its surface. In and among the outcrops of rock to be seen here and there on the plain one may come across, protected by the dense stems of some bush, an interesting plant. In some, after destroying a bush, I unearthed the tuberous root of *Arum creticum*, with a canary-yellow spathe six to nine inches long.

On the outskirts of the plain, in the clefts of rock, out of reach of the browsing goat, may be seen *Acer creticum*, *Berberis cretica*, with its small yellow blossoms, and the wild Pear (*Pyrus parvifolius*).

Immediately above my camp was a tiny chapel, built at the expense of some religious devotee, for the benefit of the shepherds, where, at intervals, during the day, a child from the

nearest encampment rings a bell, not for any service in the church, but rather to give the shepherds of the plain and on the surrounding hills an opportunity of offering up a prayer. I was reminded of that well-known picture the "Angelus," by Millet. Occasional services, I understood, were conducted by a visiting priest.

By the chapel grew a well-shaped Hawthorn, of large leaves, in full bloom, conspicuous in all its solitariness. Above this again, a few minutes' walk leads to the Idaean cave, with its oblong stone altar near the entrance. It claims one's attention for its mythological tradition, as being the place where the infant Zeus was matured. A steep descent over snow leads to the cavernous interior from whence so many antiquities have been extracted.

The route taken in the ascent of Ida lay immediately behind the camp. Accompanied by a German zoologist who visited my camp the previous day, we scrambled up the steep face of friable rock and scree, with long streaks of snow leading to the main ridge. I had no aneroid, but I reckoned that it must be between one thousand five hundred feet and two thousand feet. Once on the ridge, one's pace was considerably accelerated by the loose, flat stones which pave the route all the way to the summit. Large areas of the rounded surface of the ridge and all declivities were covered with snow, in splendid condition, and added much to the comfort in walking. At the tail end of some of the snow fields by the edge of the melting snow, we came across "the children of the hills," in all their full splendour, under the most favourable conditions of sunshine and stillness. What a feast of colours we had of *Chionodoxa*, *Crocuses*, and *Tulips*—some bursting into bloom through the very snow itself, like many coloured jewels on a white field. Of *Chionodoxa* there appeared to be two varieties: the one, *C. cretica*, with white segments fringed with a puce the colour of *Colchicum Bornmulleri*, and the other, *C. nana*, all white with a faint suspicion of the same puce. *Crocus Sieberi* var. *heterochromus* bursts into bloom as the snow melts. There appears to be three variations of the same plant on Ida: the strongest and most attractive has, on the tips of the outer segments, strong markings of a pure dark purple, diminishing half way down each segment and then merging into a rich orange-yellow, both colours being on a white base. The upper portions of the inner segments are white and then merge into orange down the throat; at the base of the throat of the outer segments there is a strong marking of dark maroon. The pistil extends beyond the anthers, which are old gold, and divides into three widely-opened stigmata of an intensely vivid orange.

The second variety has all the same characteristics of colour and growth, the only difference being that in the outer segments the dark purple starts from the perianth tube and extends in a narrow stripe to the tip of the segment. In the case of the third variety, the base of the throat has the same dark purple, and all the segments are white with strong orange merging from the base of the throat and extending half up the segments. The first variety I have described is not only stronger, but larger in the blooms, and carries a number of flowering stems from one base. The seed capsules develop in the ground and emerge above ground as the seeds ripen. When I dug up the plants, I saw no seed pods, and it was only after my arrival home that I discovered the seeds in their capsules, wrapped up in sheathing leaves and spathes.

Tulipa cretica is undoubtedly the most beautiful of the bulbous plants I saw: it was growing in full bloom near the snow. Here again there are two varieties of the same plant. The most pleasing has a rich maroon red on the outer sides of the outer segments lined on their inner sides with a skin or film of white. The inner segments are white in both sides, with a slight indication of the same maroon faintly covering the white: the anthers are orange. The leaves are keeled and curved outwards, the largest of the two varieties

measure one-and-a-quarter inch in width, and the plant out of ground is nine inches high.

Of other plants, I saw *Gagea foliosa*, *Corydalis rutifolia*, *Lithospermum incrassatum*, *Alyssum idaeum*, and a small vivid pink *Lychnis* which I have failed to identify. Spiny plants were much in evidence, such as *Ononis diacantha* and a plant which appeared to me to be an *Astragalus*: these make tempting cushions for the weary.

But the most fascinating of all, to my mind, is *Prunus prostata*, which, on the wind swept slopes of Ida, creeps along the ground. Near the cave of Kamares on the south slope of Ida, at nearly four thousand feet altitude, another of the sacred places to which pilgrimages were made in Minoan times, I found several plants growing amongst boulders in a much happier condition. Here it was thick of stem, showing its stunted growth full of crooks and turns, shaping itself to all the irregularities of the rock up which it was growing, and never projecting beyond a few inches. The plants I saw were little more than twenty-four inches high; they were in bloom, the colouring being pink, flesh colour, and white, a charming combination, reminding one of our Apple blossom in very diminutive form. Near by, large masses of an *Onosma* were coming into bloom, the yellow bell-shaped blossoms drooping gracefully from an erect stem.

My introduction to *Iris cretica* came about in a somewhat odd manner. I was on a mule, and as I rode along, always intent on searching for plants, I suddenly found myself entangled in the branches of a tree which unseated me. I fell into a tussocky clump of what appeared to be grass, then discovered to my intense delight the flowers of a small *Iris* which turned out to be no other than the Cretan variety of *D. unguicularis*. Later on, I came across many more plants in full bloom, mostly growing in sheltered places, and from what I recollect of the blossoms they are different from the variety I know as of Spanish and Algerian origin. All I saw were smaller flowers, with splashes of dark violet-blue and strong gold on a base of lavender and grey colours, and I think I am right in stating that the falls and standards vary in their colour arrangements much more than do the Spanish varieties. The leaves are glaucous, of a leathery texture, and measure from seven to twelve inches long. They are very beautiful flowers, well-shaped and coloured; and blooming as they were at four thousand feet in May, they should make a pleasing succession to the variety already well-known in this country.

I visited several old Turkish cemeteries in search of *Irises*, as it is generally understood that, being a sacred flower amongst Mahomedans, they would be found on graves: but all in vain. Turkish cemeteries are very extensive outside the principal cities, but since the withdrawal of the Turks, they have become the resort of cattle and goats and are fast falling into decay and ruin.

In the garden of a Metropolitan on the border of the Massares Plain, I came across a whole mass of *Iris cyprian* in bloom, growing in partial shade. The flowers are scented: the plants measured five feet five inches in height, very strong in the stem, and had dark green leaves. Questioned as to their origin, the priests could not say how they had been acquired.

My stay on Ida was all too short. I was caught in one of the most violent rainstorms I have ever experienced. For twelve hours my tent was battered with sand, hail, and rain, coming from the Libyan Sea. At intervals during the watches of the night when there came a lull in the storm, I could hear the approaching wind travelling towards me. Fortunately, I was able to take in a reef in my squatters' tent by lowering the canvas of the tent to the first joints in the two upright poles, fore and aft. At daybreak, striking tent, I sought refuge in a small chapel already occupied by my men. The men were for returning, pointing out that the torrent beds which in places were the mule tracks, were likely to be in flood if we

remained another day. Furthermore, there was also the question of provender for the mules, so accordingly I was induced to give up further sojourn on Ida, and returned to the plains.

So ended a trip which has whetted my appetite to return again "to the land of spines and scent." Crete is unlike any other of the Mediterranean islands. It has a mountainous back-bone of hills extending from one end to the other with two summits rising above eight thousand feet, and for half the year capped in snow. It has none of the mountainous beauty of Corsica, the scented isle; its flora, I learn, is allied to that of Asia Minor though it also has its own characteristics.

Although my hunt for plants was confined to the higher altitudes, I was not unmindful of the beauty of the colours of the flowering plants on the roadside. For miles, as I went along in a motor or on a mule, *Salvia triloba* with one or two varieties of *Chrysanthemum segetum*, or *C. coronarium* mixed with *Anchusa italica* made a blaze of colour on both sides of the road, with here and there a sprinkling of *Nigella*, *Phlomis* and *St. John's Wort*; while *Asphodelus* was everywhere in abundance.

Crete, with its archaeology, its monasteries, its museum, its flora, and I believe the perfect safety to visitors, affords travellers a new field for a camping holiday to any who seek peace far from the madding crowd. *Geo. P. Baker, Irydene, Cold Blow, Berkey.*

ORCHID NOTES AND CLEANINGS.

BRASSO-LAELIO-CATTLEYA FLAVIDA.

THE beautiful *Brasso-Laelio-Cattleya flavida* (Fig. 67) in the collection of Baron Bruno Schröder, The Dell Park, Englefield Green (gr. Mr. J. Shill) was raised from *Brasso-Laelio-Cattleya Amber* crossed with *Laelio-Cattleya Golden Queen*.

The petals are broad, and with the well-formed sepals and finely balanced lip make a beautiful shaped flower, which is remarkable for its fine lemon-yellow colour which is deeper at the margins.

The lip has deep orange-yellow blotches with Peach colour at the edge, which is beautifully frimbriated; the interior of the lip has delicate pencillings of reddish-magenta; the column is nearly white. *Brasso-Laelio-Cattleya flavida* is a beautiful Orchid of the highest quality. The bloom illustrated in Fig. 67 is slightly reduced in size. The plant which bore it is only four years' old from seed, and it is to be expected that when the specimen is stronger and older it will develop blooms even larger and finer in quality.

AUTUMN-FLOWERING CATTLEYAS.

At one time the difficulty of obtaining flowers of this gorgeous family of Orchids during the autumn must have been of considerable concern to those who were responsible.

Choice flowers are always appreciated at any season, but doubly so when the days are shortening, and plants out of doors are losing their brightness, it is then the many beautiful hybrids of these Orchids, also *Laelio-Cattleyas*, and *Brasso-Cattleyas*, which produce flowers during the autumn, will furnish a bright display. Considering the limited number of species available as parents, hybridists have attained remarkable results. There are upwards of two-hundred-and-sixty crosses of *Cattleya Dowiana* with other species and hybrids, whilst over one-hundred crosses have been made between *Cattleya Warscewiczii* (syn. *gigas*) and other hybrids, and over one-hundred-and-thirty hybrids are recorded between *C. Hardyana*, itself a natural hybrid, and other species and varieties.

It is not claimed that all hybrids are an improvement on the original species; but there are many which are a decided improvement, both in size, shape and colour of the flower.

By using the species to cross with the best of the hybrids the constitution of the plants

is improved, as by their reintroduction as parents vigour is imported to the offspring. Many growers had the greatest difficulty in keeping the imported species alive over a series of years, but there is no great difficulty with plants that have been raised and thoroughly acclimated in this country.

The deterioration of *Cattleyas* often complained of by growers is mostly attributable to faulty culture; in many cases too much fire heat, an excess of water, insufficient air, or some other cause. To give a precise routine of culture for the different members of these autumn-flowering plants would require considerable space, and when the complex nature of their parentage is considered, it is obvious that there is some variation in the mode of treatment required.

more than in the growing of Orchids. Exhibitions show us what can be done, not how it is done, and every ambitious cultivator should aim to surpass in raising varieties superior to others already in existence. The pioneers in Orchid hybridization, with their limited resources gave us many valuable lessons, and how much wider now is the field with the many secondary and tertiary hybrids which may again be used for crossing with the species. *J. T. B.*

LAELIO-CATTLEYA ASHTON.

MR. C. WRIGHT, gardener to the Hon. Mrs. N. C. Rothschild, Ashton Wold, Oundle, sends a flower of this showy decorative hybrid raised between *Laelia Pacavia* (purpurata × tenebrosa) and *C. Mossiae*, taken from one of a small batch

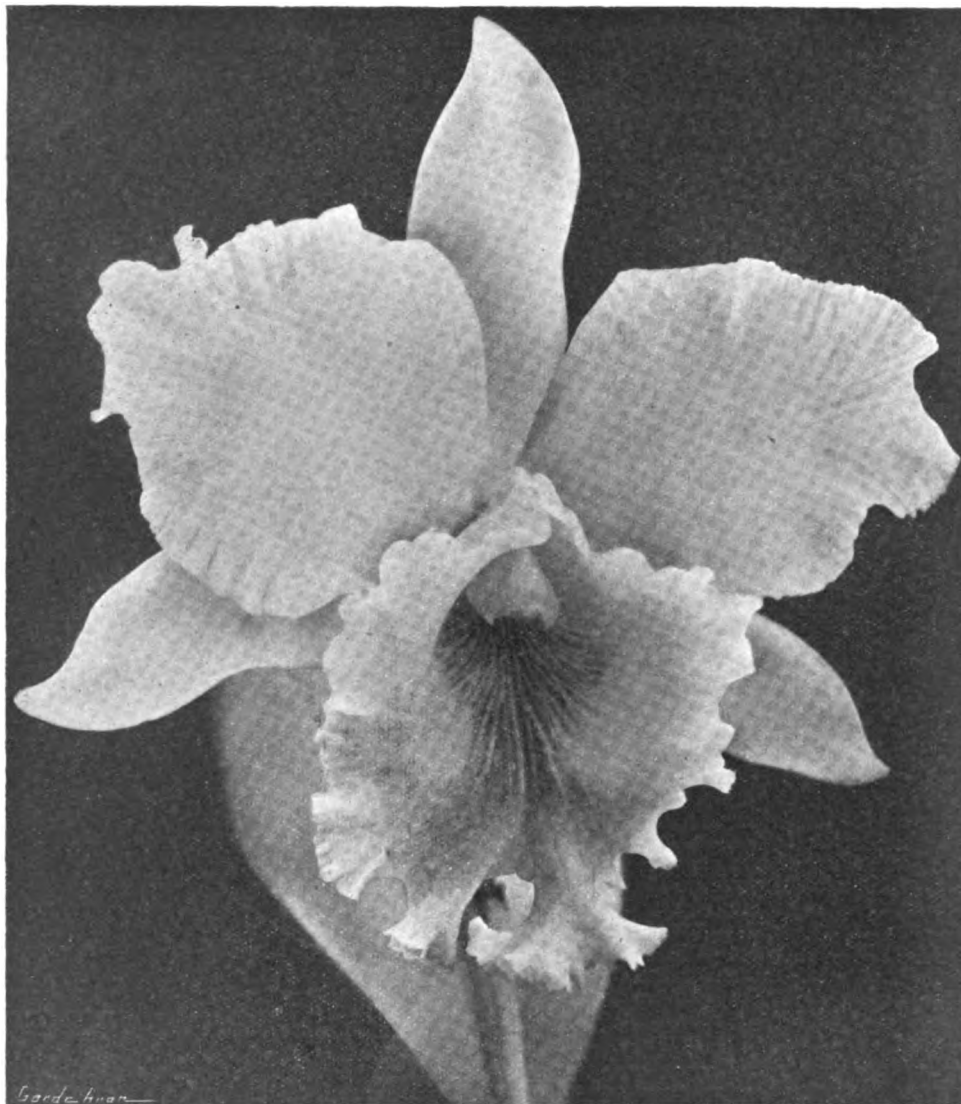


FIG. 67.—BRASSO-LAELIO-CATTLEYA FLAVIDA.

Careful observation will teach the particular requirements of the different varieties; when to withhold, and when to apply water, also when re-potting is necessary. This latter operation should never be undertaken unless the plant is about to make, or is making, new roots. Careful watering, especially after re-potting, is the key to success, for too much water has the same ill effect as too little.

The variation in the progeny from identical parentage is most marked in these interesting plants, and occasionally great diversity is found in the seedlings. There is a wealth of material to select from in forming a collection of these most lovely autumn-flowering plants. The best teacher in all branches of horticulture is experience, and in no branch does this apply

raised at Ashton Wold, and which varies much in the colour of the lip.

In *L. Pacavia*, flowered by Messrs Jas. Veitch and Sons in 1901, the defective sepals and petals of the parents were much improved, and in the present hybrid the introduction of *C. Mossiae* results in the expansion of all the segments, and especially the lip.

The blush-pink sepals and petals extend to eight inches, and are well displayed. The tubular base of the lip is coloured like the petals, the interior having thin, dark purple lines. The expanded front lobe is bright mauve with purple lines in the centre.

A batch of hybrids raised at Ashton Wold since the war is said to be giving a very useful supply of flowers for decorative purposes.

FLORISTS' FLOWERS.

NOTES ON CHRYSANTHEMUMS.

DURING September the growth of these plants is fairly rapid, for at this time in ordinary seasons sunshine alternates with showery weather. If all has gone well the leaves and stems will develop tones that betoken ripeness; the former will often be tinted bronzy-green.

The earlier bloom buds will be swelling, favoured by the heavy dews at nights, and at this period the plants will be free from insect pests, but not entirely, for while earwigs do not matter much, there is the leaf-mining maggot to consider, and soon the grower will be worried by small birds which in their desire to rid the plants of thrips will peck all too deeply into the flower bud, and may leave impressions in the florets under the outside cover.

To cope with the latter, pieces of muslin should be placed over the buds in the case of those intended to supply specimen blooms.

It is to be preferred that the flower buds should swell and partially open while the plants are outside; but the moment the petals show colour, or rather, so soon as the bud bursts and shows its florets, it is well to protect the plants from overhead moisture. If the blooms set and swell under glass the top growth is apt to run up spindly and become soft; but this will not occur with buds and top leaves developed in the open.

Every plant should have ample space. For this purpose the grower should be continually shifting and replacing the pots: apparently a small item, but there is much in it. In my plants the number of branches or stems is severely limited. Thus a plant intended to produce a giant bloom may have but one stem, and, of course, one flower. Others are intended to furnish stoutly-grown blooms of the decorative type from half-a-dozen upwards, and the same with respect to the single-flowered varieties. Having decided on the number of blooms a plant shall be allowed to carry, every little side-shoot should be removed, because it is superfluous.

Stimulants should be given the roots regularly, the rule being a little and often. Liquid manure may be used, and soluble fertilisers in showery weather. The latter should be used with caution and not always according to the instructions of the makers; for instance, in the case of a well-known fertiliser it is recommended to use a tablespoonful to a plant in a ten-inch pot. I would not, however, use it at this strength, but prefer a quarter of that quantity. Too many ills arise from plants that are overfed, and very great caution is needed in applying stimulants to Chrysanthemums.

The first consideration of the grower is to get the pots well filled with roots, and the second to "feed" them so that these shall not be burned. The decay of the blossom as it is opening is often termed damping, and many theories have been put forth as to its cause. I can provide one, viz., improper use of stimulants.

Last autumn, a test was made to find out if certain varieties of Chrysanthemums would withstand full exposure to sunshine. What was considered the most delicate sort, or rather the one most likely to be affected, the maroon-coloured N. Davis, was placed so that its blooms were within a few inches of the glass, and the latter was not shaded.

The blooms opened perfectly, without a speck of decay, and my contention is that any Chrysanthemum blossom may be opened in exposure to sun and be all the better for the sunshine in autumn, provided the roots of the plant are in good order, and the growth not soft through the improper use of fertilisers. The glasshouse should be well-ventilated, and, when the conditions outside are unduly moist or foggy, a little fire-heat should be used. The plants are rarely safe in the open after the end of September. If the grower wishes

to retard any of his plants a good plan is to arrange some kind of shelter to ward off frosts; this is a capital plan with late-flowering sorts.

Outdoor Chrysanthemums are in good condition owing to the recent rains, and the flower buds are showing freely. I favour thinning these plants severely; in fact I allow but one flower to a branch in the case of most varieties. Blooms of good substance, with stems of considerable length, provide valuable material for decoration of the home. Not all early kinds are treated in this way; many are allowed to develop as they please in the matter of bud and bloom, with just a stick or two to keep the plant upright.

Lifting Chrysanthemum plants from the open ground to bloom under glass is practised by many growers. I have not, however, adopted this plan yet. The trouble comes at a critical time, for, do the work never so well, the plant is bound to receive a serious check when blooms are either forming or swelling. True, a saving in labour is effected, but correspondingly there is a loss in quality of the subsequent crop.

Referring again to pot plants, it is early perhaps, to write much about special varieties; so far as strength of plant goes, however, there are few to compare with the new Japanese variety raised in Australia named Mr. T. W. Pockett. This should prove a fine sort of the big blossom type.

The time for exhibiting is closely upon us, and we may expect to find examples of the flower as well grown as ever they were, but fewer growers compete than formerly. A leading society has allowed a space of one foot on the stands or boards for each big bloom, but it seems doubtful if such a change is likely to improve the old-time way of showing. One looks to the single type of the flower to keep up the interest in the autumn displays, and in respect to single Chrysanthemums, I shall not be far wrong in stating that greatly improved varieties will be seen in the near future. *H. S., Woking.*

SWEET PEAS.

FOR several seasons up to this year I had not visited the annual exhibition of the National Sweet Pea Society, and I was prepared, therefore, when visiting the show this summer, to compare the newer varieties with those of the past. I may state that so far as excellence in cultivation is concerned, there is no difference; it would seem that in this respect there is likely to be no change for the better. Rich colouring was most marked in the blooms in the more important classes. In the colour classes one exhibitor won practically the whole of the prizes, and yet when similar samples were entered in a class for a dozen bunches, they came no nearer than third. This may be due to different judges being appointed to judge the different sections.

Respecting varieties, if two could be named as being the more conspicuous generally, these would be Charming and Hebe. The one is a lovely shade of cerise, the other a glorified form of Countess Spencer, the original variety of the waved Sweet Pea. The type, then Hercules and now Hebe; this is what care in selection has done!

Pimpernel, of scarlet colour, is very fine, and most exhibitors favoured it. Royal Sovereign in orange-scarlet appealed to me among several in that shade; whilst George Shawyer is the old Edrom Beauty excelled. Lavender is fine in a light hue in Powerscourt, and it seems to me that in the darker shade, the variety R. F. Felton is still as good as any, although Austin Frederick may be the more used by competitors.

White is by itself in Constance Hinten, and I will leave others to distinguish which was the better cream shade, Matchless or Daffodil. Royal Purple is always telling with other shades, and that is why exhibitors use it so freely. Royalty is quite a good form of it, but in blue shades Mrs. Tom Jones has not apparently been improved upon. The really dark coloured sorts may not add to the effect of a display; anyhow, these are not much in

evidence at shows, and, curiously, I noticed that quite an old variety, King Manoel, was the more prominent of the maroon shades, although the Sultan is quite the darkest in colour. Picture, in cream-pink, is excellent; yet I fancy the lighter shaded Mrs. A. Hitchcock was the more prominent variety. Perhaps Pink Perfection has taken the place of Hawlmark Pink, at any rate it is a charming sort. Elegance and Valentine provide soft and light shades of blush-pink, and both sorts were favoured by those who competed. I noticed less of John Ingman than in years past, and even the capital selections Renown and Mascotts Ingman are not employed so freely as one would imagine their rich carmine colour would ensure. I like Youth because it seems to be a good form of the white, margined rose, Annie Ireland; but to-day there is no striking selection of the other counterpart with buff instead of white. I refer to Jean Ireland, which used to be shown well, Nor was Charity, the best of the crimsons, much exhibited for its glorious colouring. I would extol ZLO; the crimson scarlet is even richer than in either Pimpernel or Gloriosa. Pimpernel is new. So is Miss California, and it is exceedingly effective in light salmon-pink on cream. Mammoth, Grenadier and Tom Sykes are new, and all three may soon find themselves among the more approved varieties. Then there are Venus, Gold Crest, and Rosy Moon, each with possibilities to be brought out when they are grown by expert cultivators. *Visitor.*

FORESTRY.

SELLING HOME-GROWN TIMBER.

OF late years, the last decade in particular, there has been a noticeable falling-off in the number of public auctions of home-grown timber, this time-honoured method of disposal having been largely substituted by the simpler and much less expensive one of selling by private treaty.

This change may be accounted for in several ways, but principally in the matter of attendant expenses, as much larger numbers of timber trees are now disposed of standing or unfelled than was the case in pre-war days, when labour was comparatively cheaper than is the case at present, and the majority of timbered estates kept their own staff of woodmen.

At the outset, it may be well to mention that there are several recognised systems of disposing of forest produce, each of which is no doubt specially adapted to suit the exigencies of the particular case in point. These might be included under four distinct headings (1) by public auction sale, the trees being either standing or felled (2) by private treaty, selling the trees usually as they stand; (3) by weight, and (4) by actual valuation or measurement.

Public auction sales are usually held during or at the end of the felling season, when the trees are lotted either in the plantation or on a piece of ground convenient for removal purposes, outside and adjoining the woodland boundary. So far as practicable, each kind of timber is kept separate; such as Ash in one lot, Oak in another, and so on, while others of about equal value; such as Birch, Alder, and Cherry, may, for convenience, be included in one and the same lot. Larch is kept separate from Pine.

In some cases the felled trees are offered for sale as they lie in the plantations, but it is usually found better for the vendor to have the trees felled and lotted, as previously described, as then greater care is taken to avoid injury to the trunks and roots than when the haulage work is carried out under contract by the purchaser's men. The trees are then advertised in the trade papers, with numbers of each, approximate sizes and contents, an estimate of their quality, where and how they can be viewed, and a place and

date arranged for the auction. When timber trees are felled and lotted for disposal a considerable amount of time has to be spent in counting and measurements, an auctioneer must be employed, and sometimes a lunch is provided, all of which is done away with by the simpler method of selling by private treaty. Where a regular staff of woodmen is employed and thinning constantly going on, lotting the trees and disposing of these by auction may be a necessity, but in the case of standing trees the private tender system has been found to work best.

Selling trees by private treaty has much in its favour, whether so far as expenses are concerned, or in the matter of all the timber being purchased by one and the same merchant. Neither is there any of the usual haggling over bark allowance and measurements that have often been the case when disposal of the trees by public auction or otherwise is resorted to. The usual way is for the woodman to mark with a dash of paint the trees that are intended for sale, send a list of these with numbers and kinds to several likely merchants, preferably those in the neighbouring districts, for carriage rates are now so exorbitant that most merchants prefer to buy as locally as possible, and, after viewing the trees, send in their tenders at a pre-arranged date. In connection with the private sale system, an agreement as to method and time of removal of the trees is drawn up and signed, also as to terms of payment. The conditions of sale safeguard the owner against damage to standing trees, as also fences and hedges, as well as the particular roads that are to be made use of in removing the timber. For many years I have conducted sales in this way, and with a knowledge also of the public auction methods, have found the results satisfactory in every respect. Objections may be offered to this method, as only a limited number of merchants see the trees, but in practice this has been found to be no drawback, as now-a-days buyers object to purchases made far from home, on the score of expenses in handling the timber. Local buyers who are known on the estate are most likely to give a fair price for the trees, as they know the quality of timber and usual expenses connected with felling and removal.

Selling timber by weight is usual in the case of pitwood and valuable trees such as Yew, Holly and Box, and when a weighbridge is on the estate it is one of the fairest and simplest methods of disposing of woodland produce. The price per ton being arranged, the weighing may be either carried out on the estate or at the yard of the purchaser, where the weight can be recorded as the trees are brought in. A great deal of timber in Ireland is sold by weight.

In the valuing of standing timber, especially where the trees are of similar age and kind and fairly regularly distributed over the ground, the approximate contents may be arrived at by multiplying the number of trees to the acre by the cubic measurement of one of average size. In doing so, it may be found necessary to take measurements and numbers in several parts of the woodland, as with exposure and soil the cubic contents may vary considerably in various parts. On some estates trees are cut down and disposed of as required, and in such cases, price being arranged, the cubic contents of each tree should be taken separately. This is, that the square of the quarter girth in inches, multiplied by the length in feet, and divided by one-hundred-and-forty-four, equals the contents in cubic feet. The Hoppus measure of one-hundred-and-forty-four divisor is the invariable custom of the trade in all buying and selling transactions, whereas the one-hundred-and-thirteen divisor is principally in use by the customs and various railway companies where measurement weight is adopted. Poles for fencing and other purposes, that are not of sufficient size for cubic measurement, are usually lotted in heaps according to dimensions and kind. The butts should be kept together and in such a way that counting may be readily engaged in. The price is arranged according to size and kind at a fixed price per lineal yard. *A. D. Webster.*

VEGETABLE GARDEN.

BORECOLE OR KALE.

(Concluded from page 155).

In the late sixties of the last century a market grower and farmer in north-west Kent had a few acres of Thousand Head growing for his sheep. It was a hard winter, and he sold the shoots to a market speculator for £60 an acre and both buyer and seller were satisfied with the results: the sheep had the stems and leaves.

With so many excellent varieties already in existence there hardly seems room for further additions to the list, but several new forms were included in the recent trials at Wisley; to some of which awards have been made as follow:—

New Winter (Dickson and Robinson). Award of Merit (see Fig. 68). A plant of eighteen to twenty inches high forming large, compact heads; foliage very large green, broad, and densely

A good example of the Lerchenzungen (Lark's Tongue) type, which, on account of its hardiness, is so highly esteemed in Holland and Germany.

Good strains of Tall Curled (Toogood and Sons, Ltd.), and Tall Green Curled (Nutting and Sons) were Highly Commended, and Exhibition Moss Curled (Barr and Sons), Commended. None of the last named varieties was damaged by frost, which was rightly considered to be a most important factor by the Sub-Committee which recommended the awards.

Of the older varieties in the trials, a grand strain of Turner's Cottager's Kale from Mr. Mr. W. H. Simpson, rightly received an Award of Merit. Its height is two to two-and-a-half feet; the plant is very vigorous, foliage large, crumpled, dull dark green, more or less tinged purple, sprouting freely, not damaged by frost. This Kale is suitable for small gardens. Its variable colour is rather against its appearance, but after being cooked the difference is hardly

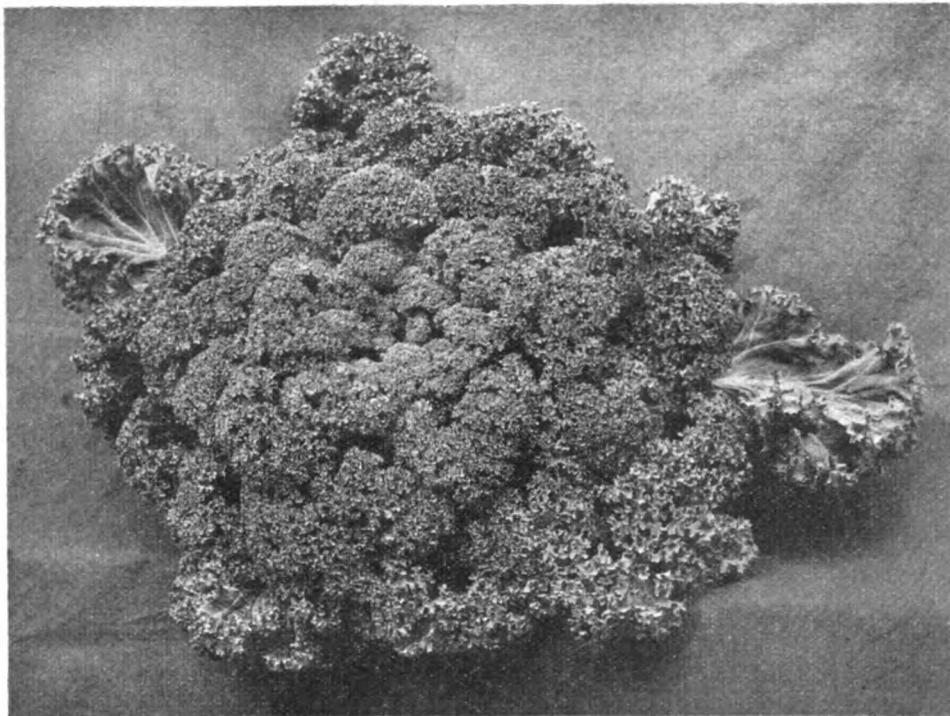


FIG. 68.—KALE NEW WINTER

curved, of a medium dull green colour, and great substance; sprouting late, not damaged by frost. The raisers state, "Our Winter Kale is not grown for its shoots, but purely for the heart and foliage. At the turn of the year, and in the month of February, the plants make remarkable growth, and take our markets when Sprouts are getting finished."

As the result of a cooking test of a complete plant at the end of April, I am able to affirm that it has a delicate flavour and is of good table quality.

New Labrador (Barr and Sons). Highly Commended. A refined form of the purple Buda, closely resembling Mr. E. Beckett's strain referred to on p. 155.

Limpfield Greens (Roberts). Award of Merit. This I have previously described under forms of *Brassica Napus*.

New Sprouting (Barr and Sons). Award of Merit. An intermediate variety of the green, crested margin type; strong growing, with foliage broadly curled. In the report of the R.H.S. 1923-24 trials it is stated to have been damaged by frost.

Northern Plume (Jackson). Highly Commended. Plant eighteen to twenty-four inches high, foliage long, narrow and heavily crested, sprouting freely, and not damaged by frost.

discernible, and its abundance of shoots makes it a most profitable crop. Conspicuous in the trials was Chou de Russie or Russian Kale. It is perhaps the most distinct variety; greyish green in colour, with deeply cut leaves, and is extremely hardy.

It was catalogued as Russian Curled Kale by Mr. William Drummond, Edinburgh, in 1754, and in 1907 it received the R.H.S., First-Class Certificate, after trial at Wisley; it was sent by Messrs. Carter and Co.

It is a pity that no sample of Chou de Milan was included in the Wisley trials as it is one of the most acceptable winter greens. This variety was quoted in the catalogue of John Mason, 152, Fleet Street, in 1793, and should not be confused with the French Chou de Milan or Savoy Cabbage, as it is quite distinct therefrom. The plant grows about two feet high and produces an abundance of plain, bluntly toothed leaves with a small head on the top of the stem. Early in the year it sends out a supply of shoots which are of exceptionally good quality. It is highly esteemed in Wiltshire and the south-west of England.

Other comparatively recent introductions are:—

'EARLEY'S HARDY GREEN WINTER.—A cross between Scotch Kale and Brussels Sprouts,

introduced by Mr. B. S. Williams about twenty-five years ago, but this Kale appears to have gone out of cultivation.

VEITCH'S SPROUTING.—Sent out by the famous Chelsea firm. A really good variety, but not a prolific seeder.

DRUMHEAD.—A most distinct variety, heading like a Drumhead Cabbage; the margins of the leaves are crested and the leaf has a large midrib.

MARROW-STEMMED KALE.—Green and purple varieties were fully described in *The Gardeners' Chronicle* for March 22nd, 1924, p. 165.

Of the **ORNAMENTAL KALES**, several of the closely curled green and purple varieties may be used for decorative purposes in large establishments. The Palm Tree Kale, a miniature form of the ideal Palm tree, with dark bluish-green leaves, and the Coleus-leaved Variegated are the best.

As regards the latter Matthias Lobel, 1618, states that the Gepickelde Koole was mentioned by Petrus Hondius, circa 1600, as *Brassica variegata*. By this time the novelty of this truly ornamental Kale has worn off.

KALES IN AMERICA.

It is somewhat remarkable that Americans, who, as a rule, are fond of good vegetables, do not appear to have taken very kindly to Kales. In a catalogue which covers such a wide field as that of Messrs. W. Atlee Burpee Co., only three varieties are quoted, viz.: Tall Green Curled Scotch, Dwarf Green Curled, and Siberian; the last, which is a dwarf variety with bluish tinted green leaves that are curled at the margin, is by far the most popular variety.

It is fairly hardy in the districts around Philadelphia and on Long Island, New York, where large quantities are grown for seed. The more northerly districts, where winter temperatures down to zero, Fahr., are not uncommon, have to depend in great measure for their supplies upon the South. An immense acreage of Kales is grown in Virginia for this purpose, both of the Siberian and the Dwarf Curled Scotch, the closely curled variety of the latter being by common consent the hardier of the two.

On the latter point, Mr. C. L. Allen in his work on Cabbages, Cauliflowers, etc., states: "The last winter, which had periods of unusually severe cold, has not injured the Scotch Kale in the least, while the Siberian, though not killed, had to produce entire new leaves in the spring which it will not do if the plants are strong, as they will upon the commencement of a new growth, throw up their flowering stems and produce their seed."

Another member of the Brassica family named Georgia Collards is grown largely in the south for a home supply of greens, it being of easy culture, very productive, and able to endure the heat. It is a variety of Cabbage that does not form heads, and is similar to that known in France as Cow Cabbage. As in France, when the leaves are stripped from the stem others form above, and so the plant increases in height. It is named Cow Cabbage, but a very large proportion of the young leaves find their way into the *Pot-au-feu* with which the peasant regales himself at the close of a long day's toil.

With regard to the distinctiveness of the Siberian Kale, it is remarkable that Miller 1759 quotes it thus:—*Brassica fimbriata Siberica*, Boerh. Ind. 2, 12. Siberian Borecole, called by some Scotch Kale!! and a leading German firm in a catalogue of very recent date quotes it as Buda, or Siberian dwarf green. S. B. Dicks.

ASPARAGUS.

THERE are many controversial points in the methods of cultivation of the Asparagus such as raised *versus* flat beds, deep *versus* shallow planting, large *versus* small beds, when and how to manure, and so on. These points may always remain controversial. They are not necessary factors governing success or failure, but represent variations due to local circumstances and conditions which the grower on the spot has to take into consideration in

deciding which methods are the most likely to meet the needs of his particular case.

A point that admits of no controversy, however, is that the next year's crop depends largely on the treatment given the beds from the time when cutting ceases until the time of the growing season, that is, broadly, during the months of July, August and September. This point often seems to be lost sight of in the general management of Asparagus beds. Not only the weight of the crop, but its quality, that "finesse" of flavour, depends largely on the condition of the plant. Everyone realises that quickly-grown heads are of the best quality and although weather and soil temperature play an important part in this, they are not the only factors. To maintain this quick growth of large, succulent heads over a period of six or eight weeks is only possible when the plants are full of health and stored up energy, and this can only be attained by previous good cultivation. Some crops are able to fight for their existence and appear to do fairly well even when crowded with weeds, but the Asparagus is a poor competitor amongst other growth and the cultivator who allows weeds to make headway in his Asparagus beds pays forfeit in the reduced value, both in quantity and quality, of his crop.

Another cause of failure is the neglect, at this season, to give support to strong growths, with the result that many crowns are devitalised by losing prematurely the builders up of their constitution. Strong growths should always be given support, and it is a good routine to use the sticks from the first rows of early Peas for this purpose. If thrust firmly into the ground all over the beds, slightly leaning them towards the prevailing winds, they provide efficient support and prevent the loss of valuable growths.

Many growers are very particular and methodical in the application of a dressing of salt just as growth commences in the spring, and satisfy themselves that this is a great factor in influencing the current crop. But judicious feeding over the whole period of growth is more essential, and a far greater factor in the building up of a vigorous, healthy root stock, which is the *sine-qua-non* in the production of a high-class vegetable.

CELERIAC.

ALTHOUGH Celeriac cannot be compared to the common Celery for delicacy of flavour and general usefulness, it is, when well-grown a good vegetable, useful for flavouring soups, and also takes a not unimportant place in mixed salads. The plant is considerably hardier than the common Celery, and for that reason is much more largely grown on the continent, where the frost is so intense that ordinary Celery cannot be preserved during the winter. Like the Celery, it requires to be grown in rich, well-worked soil, and good cultivation should be practised to obtain large roots, as those of small size are of very little service. It is during the months of August and September that the greatest root growth takes place, hence every encouragement should be given to the plants during this period to promote quick growth.

Celeriac is a thirsty plant and should not be allowed to suffer from lack of moisture, while occasional waterings with liquid manure are highly beneficial. Frequent stirrings of the surface soil should be practised, and when foliage is abundant, a few of the lower, spreading leaves may be removed from each plant to allow the light and air to reach the surface of the soil.

When the plants are nearly fully-grown, a little soil may be drawn to the bulb on each side of the row to render the top part of the bulb whiter, but earthing up in the accepted sense of the term is not necessary.

The roots may be used as drawn from the ground, but if severe frost is anticipated, a quantity may be lifted, divested of foliage, except just the heart leaves, and stored in sand in a shed or cellar for use as required.

The plant is subject to the attacks of the Celery fly—*Tephritis onopordinus*—which often does considerable damage. Frequent dustings

of soot while the leaves are dew-laden acts as a deterrent to the fly in depositing its eggs, but a sharp watch should be kept for the grub which lives on the soft tissues of the leaf, and if the least trace of the enemy is observed, the blighted portions of the leaves should be squeezed to kill the grub and prevent pupation, or increased numbers of the pest may return in the next generation. W. Auton.

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. 111-116).

(Continued from p. 154).

ENGLAND, N.E.

NORFOLK (continued).—The Apple crop is almost equal to the average. Bramley's Seedling, Lord Derby and Mere de Menage are very promising, and the trees free from scab. Pears are very much below the average. Bush fruits were very good. Strawberries were very fine and of good flavour. Cherries, Apricots, Peaches, and Nectarines are only moderate in quantity. We experienced a very heavy hailstorm on May 10th accompanied by a very low temperature, which damaged wall fruits very much. Pear and Apple trees were damaged considerably. Dessert Apples are very scarce. Worcester Pearmain, Beauty of Bath, and King of the Pippins excepted. The soil is a sandy loam. J. E. Fitt, Breccles Hall Gardens, Attleborough.

SUFFOLK.—The fruit crops are disappointing, the redeeming feature being a fair crop of Apples. Pears are a complete failure, and Plums almost as bad; many Pear trees had a fair amount of blossom, and Plum trees flowered freely. There were no severe frosts during the flowering period, but a succession of cold winds and rains. Plum trees appeared to set fruits well, but these soon turned yellow and dropped. Bush fruits are good, and Strawberries would have been a fine crop but for the drought.—E. G. Creek, County Horticultural Instructor, Abbey Ruins House, Bury St. Edmunds.

—Although fruit trees generally flowered well, it was the wet, sunless and cold conditions prevailing during the second half of April, and the early part of May, together with an unripened state of the wood, which resulted in such a poor fruit year. We had only .25 inch of rain between May 31st and July 20th, this being recorded during the third week of June. Apple trees are badly infested with red spider; it is a most persistent attack. Small fruits did well, particularly Raspberries, and in spite of the general opinion that the old Superlative has lost its vitality, with us it has beaten all others for quantity and flavour, the canes being eight feet high. The soil in our two kitchen gardens varies in texture, one being sand over gravel, the other a medium loam over clay. This diversity gives us many advantages. A. K. Turner, Orwell Park Gardens, Nacton, Ipswich.

MIDLAND COUNTIES.

BEDFORDSHIRE.—The fruit crops are very disappointing, especially after the profuse blooming; Apples and Plums were one mass of bloom. The blossoming of Plums was too prolonged for a good set, the weather being mostly dull, and heavy hail storms occurred, so Plums are very patchy, Victorias and Kirke's being the best. Pear trees developed scarcely any blossom; we have a few fruits of Doyenné du Comice but very few of other varieties. Peaches, Nectarines and Apricots also felt the effect of the weather during the blossoming period, and all these fruits are under the average. Apples were very promising, but owing to drought, numbers are falling, but given rain we shall have a fair crop. Scab is making an appearance, but not so bad as last season; the trees had an extra spraying, but it has not stopped the

disease entirely. Aphis is very bad, and repeated sprayings and drenchings with water after, does not make much impression on this pest. Small fruits have been splendid, especially Black Currants. Strawberries have also been splendid in size and flavour. At the time of writing, we are still gathering Laxton's Latest and Omega, after six weeks picking of various sorts. The rainfall for June was 0.7 inch. The soil is sandy. W. G. Warner, Chicksands Priory, Shefford.

—The weather at the time of blossoming of all fruit trees was very good, and the flowers were not spoilt by frosts as so frequently happens; but the exceptional sun heat, coupled with the long, dry spell during spring and early summer has crippled most fruit crops around this district. Many Strawberries never came to maturity, but remained half-grown and hard. Plums dropped off the trees after setting fairly well. Cherries were early attacked by birds for moisture. Raspberries were small and imperfect. Chas. Turner, Ampthill Park Gardens, Ampthill.

BUCKINGHAMSHIRE.—This is a most disappointing season for fruit crops, for although the trees developed an average, and in some instances an abundance of bloom, the crops are very scanty. The Prune orchards are practically bare of fruit. The prolonged drought has seriously damaged all small fruits, all of which are much under-sized, and are falling from the bushes through lack of moisture. Strawberries were quickly over, and the crop very light indeed. Many "stools" have perished through drought. Raspberries were a better crop than was anticipated, especially on canes that are growing in partial shade. Mildew and aphis have attacked most gardens and orchards rather badly. Our soil is a retentive loam, resting on clay. Cracks are unusually numerous and deep. W. Hedley Warren, "Sunnymead," London Road, Buckland, Aylesbury.

—This is the worst year for Apples, Pears and Plums that I remember. The trees trained on walls and in the orchard developed very little bloom, and it failed to set owing to frosts while the trees were in bloom. The trees are making good growth which promises well for next year. Our soil is light and gravelly. William Brooks, Abbey Gardens, Great Missenden.

—The fruit crops are rather disappointing, the continued spring drought, and the consequent absence of atmospheric moisture had an adverse effect on most crops.

Early Strawberries were good, but later varieties failed to swell, which made the Strawberry season a very short one. Apples promised well, but owing to lack of moisture many of the fruits dropped. Pears are a failure. Plums on walls are good, but in the open are not very promising. Peaches and Nectarines are patchy. Cherries and all bush fruits are plentiful. Taking results generally, the fruit crops here this year can only be described as moderate. F. Reid, Dropmore Gardens, Maidenhead.

CHESTER.—All varieties of Apples, Pears, and Plums carried extra heavy crops of flowers, and I have always noticed that when this happens the crop of fruit is light, especially on old trees. Our best cropped Apple trees this year are Worcester Pearmain, Newton Wonder, Lane's Prince Albert, King of the Pippins, Bramley's Seedling, Tyler's Kernel, Cox's Orange Pippin, Irish Peach, Cellini, The Queen, Schoolmaster, Mr. Gladstone, Beauty of Bath, Beauty of Kent, Keswick Codlin, James Grieve, Royal Jubilee, Washington, Ecklinville Seedling and Warner's King. Our best cropped Pears are Beurré Diel, Louise Bonne of Jersey, Marie Louise d'Uccle, Conférencé, Doyenné du Comice, Williams's Bon Chrétien, Passe Crasanne, Emile de Heyst and Beurré de Capiaumont. All the above are carrying good average crops of clean fruit. Plums are a failure; Morello Cherries were a good average crop of clean fruits; Gooseberries, Red and Black Currants, Strawberries and

Raspberries were all satisfactory. The dry weather caused a check to these fruits for a time, but the splendid rainfall of two inches in July did a lot of good. Early in the spring fruit trees were attacked by green-fly, but several syringings with Quassia extract killed the pest. The foliage of our trees is healthy, and the latter are building up good fruit buds for 1926. James B. Allan, Tirley Garth Gardens, Tarporley.

—I never saw more blossom on fruit trees in these gardens. In spite of this, however, the fruit crops are very disappointing. Pears and Plums are particularly bad. We shall have a few Apples, the varieties James Grieve, Grosvenor and Kentish Fillbasket yielding the best crops. Apple sucker was very prevalent, but the aforementioned varieties withstood the ravages of this pest better than other sorts. It would be interesting to know if there is resistance to insect attack amongst certain kinds of Apples. Bush fruits and Strawberries were very satisfactory, especially the latter. Only once during my twelve years here have I had a better crop. The Duke has again yielded splendidly, and it is the only one of the newer varieties I have found surpasses Royal Sovereign; its growth is very vigorous and appears to be free from "Red Plant." S. A. Summerfield, Alderley Park Gardens, Chelford.

—After great promise in the abundance of bloom on Apple Pear and Plum trees, the fruit crops are most disappointing. Some Apple trees have average crops, viz.: Lane's Prince Albert, Mère de Ménage, James Grieve, Keswick Codlin, and Charles Ross. I notice that where the soil is clayey or heavy, the crops are lighter than where the soil is sandy or gravelly. James Atkinson, Torkington Lodge Gardens, Hazel Grove, Stockport.

(To be continued.)

HOME CORRESPONDENCE.

Magnolia grandiflora.—I was greatly interested in reading your correspondent's article on *Magnolia grandiflora* on p. 234. We have a very good specimen of this tree growing on the wall of the mansion here in a southern aspect. It reaches to a height of forty feet, having long since attained the highest point which is possible to allow it to grow. The same remarks apply to the width, which is thirteen feet six inches. The stem is thirty-eight inches in circumference twelve inches from the ground. The tree is in a very healthy condition and flowers freely; each bloom being of an enormous size, and the flowers appear to open in quite a regular sequence. It would be interesting to know if there are many taller specimens in this country. J. A. Kirkwood, Sutton Place Gardens, Guildford.

Cotoneaster thymaeolia congesta.—As this shrub is again mentioned on page 156, after Mr. Arnold's remarks (p. 49) may I ask who is responsible for the name? I grow a large number of *Cotoneasters* and have one named *C. thymaeolia* and another *C. congesta*, and they are not in the least alike. The former is a small form of *C. microphylla*, the latter, as is stated by Mr. W. J. Bean in his book *Trees and Shrubs Hardy in the British Isles*, is much more distinct from ordinary *microphylla* than is *thymaeolia*, and is given the name of *congesta* (Baker). There does not appear to be such a plant as *C. thymaeolia congesta*. W. Butt, Chalford.

Self-Sterility among Plums and Cherries.—The summary of Mr. Crane's observations on self-sterility amongst Plums and Cherries which appeared in *The Gardeners' Chronicle* of the 22nd inst., is most interesting reading, but one finds in comparing the results of different observers and investigations, that they do not always quite agree. So one wonders if stocks, soils, manures, climatic conditions, ages of trees, methods of cultivation, etc., have any influence on self-sterility or self-fertility, or both. S. Heaton.

SOCIETIES.

ROYAL HORTICULTURAL.

THE meeting held on Tuesday last in the Society's Hall, Vincent Square, Westminster, was not so well attended as usual, owing, doubtless to the counter-attraction at Southport, but the building was well filled with exhibits, of which *Gladioli* constituted by far the most important subject. The special *Gladiolus* Show attracted a good number of competitors. There were also many exhibits of Dahlias, Carnations, Roses, and hardy border flowers.

There were no groups of Orchids but two novelties received awards of merit from the Orchid Committee.

There were several exhibits of fruits of which Mr. Allgrove's collection of pot fruit trees and gathered Apples and Plums was by far the most important. The joint Dahlia Committee inspected a large number of new varieties and recommended thirteen for trial in the Wisley Gardens.

Orchid Committee.

Present: Messrs. C. J. Lucas (in the chair), Gurney Wilson (Secretary), T. Armstrong, E. R. Ashton, F. K. Sander, R. G. Thwaites, J. E. Shill, H. T. Pitt, A. Dye, and Hon. H. D. McLaren.

There were no groups and only four plants were submitted for awards.

AWARDS OF MERIT.

Odontoglossum Laurentia magnificum.—The plant bore a spike of nine fine blooms, the inflorescence being very imposing. The segments are heavily spotted with chocolate-red, the tone being a little deeper in the petals and lip, and both sepals and petals are margined with faint lilac, that shows through from a rosy-purple staining on the under surface. The lip has a yellow blotch under the column. Shown by Mr. J. J. BOLTON.

Brasso-Laelio-Cattleya Golden Glory.—A variety with clear lemon-yellow sepals and petals and a glorious lip of rich yellow ground stained with rosy-mauve on the margins, this tone deepening in the upper part and in the lip, which is most pleasingly fringed. Shown by Mr. C. J. LUCAS.

OTHER EXHIBITS.

Odontoglossum Harold, shown by Mr. J. G. BOLTON, Claygate, Surrey, has finely formed flowers heavily blotched with bluish mauve, a difficult shade to describe. The lip has maroon blotches. The spike carried eight flowers.

Cattleya Surprise, shown by Messrs. SANDERS, has mauve sepals and petals, the latter with delicate white veining. The lip is a glorious claret-purple with gold veining in the interior.

Floral Committee.

Present: (Section A). Messrs. H. B. May (in the chair), Donald Allan, Andrew Ireland, Wm. Howe, W. A. Bilney, F. Streeter, Jas. B. Riding, D. B. Crane, Chas. E. Pearson, G. W. Leak, D. Ingamells, J. F. McLeod, A. Turner, F. G. Cousins, Hugh Dickson and W. B. Gingell.

(Section B).—Messrs. Chas. Musgrave (in the chair), E. H. Wilding, W. A. Bilney, G. Reuthe, Clarence Elliott, F. G. Preston, H. D. McLaren, G. Yeld, Reginald Cory, W. G. Baker, and Amos Perry.

AWARDS OF MERIT.

Gladiolus.—A magnificent variety was shown as White Lady, but as this name has already been used the award was provisional on the variety being renamed. It is a strong spike of large white flowers which have a suggestion of pale Primrose yellow on the buds and in the centre of the flowers. Shown by Messrs. KELWAY AND SON.

Phlox Annie Laurie.—This is a large-flowered herbaceous variety, bearing salmon-pink

flowers which have a narrow rosy-purple zone. Shown by the Hon. VICARY GIBBS.

Physostegia virginiana rosca Latham's variety. — There are several varieties of this variable species and three are described in Nicholson's *Dictionary of Gardening*, including one named *speciosa*, under which name the plant under notice was shown. The species was introduced from North America in 1683, and is better known in gardens under Sweet's name *Dracocephalum speciosum*. Several vigorous spikes were shown, and these carried erect racemes of flesh-pink flowers which have unusually small white lips. Shown by Messrs. LADHAMS, LTD.

NEW DAHLIAS.

The following novelties were selected for trial at Wisley.

Cheal' Pink.—A well-formed, small, decorative variety of bright pink colour, though the central unopened florets are shaded with dull heliotrope. Shown by Messrs. J. CHEAL AND SONS.

Citra.—An excellent yellow-flowered miniature Pacony of dwarf habit, suitable for bedding-out purposes.

Mrs. John Crossling.—Another good bedding variety of the same type. The small, well-formed flowers are a very lovely buff-Apricot shade of colour. The foliage is purplish.

St. Andrews.—A vivid crimson variety also of miniature Pacony type, and suitable for bedding. The flowers are round and carried on long, dark stems. The three above named varieties were shown by Mr. A. J. COBB.

Evelyn Hancock.—A broad-petalled, decorative variety of large size, with lemon-yellow colouring. This and following varieties were shown by Messrs. J. STREDWICK AND SON.

Harry Strutt.—An excellent brick-red Cactus Dahlia of perfect exhibition shape, and carried on long, stout stems.

Henry B. May.—A large decorative variety of salmon-pink colour, tipped with white. The centre florets show the yellow colour of the under sides of the florets.

J. Emberson.—A large salmon-pink variety with narrow florets and of the best exhibition type.

Mary Murray.—A good, pale orange Cactus variety.

Nobility.—A large, wine-red Cactus variety flushed with purple.

Rotation.—A good white Cactus variety.

Sheik.—A large decorative variety of pale Primrose colour which deepens in the centre.

Stedfast.—A large mauve-flushed Decorative variety of good shape.

GROUPS.

No doubt the special Gladioli show induced growers to exhibit the large collections which were judged by the Floral Committee. A particularly graceful collection of very fine varieties was arranged by Messrs. R. H. BATH, LTD. The large-flowered varieties were very prominent, and these included *Atherton*, deep pink with a crimson blotch; *Fire King*, vivid scarlet, with a crimson blotch; *Electra*, scarlet, with a white blotch; and *Black Pansy*. Chief among the *Primulus* hybrids were *Princess Elizabeth*, *Butterfly*, *Rudolph Herzog*, and *Xanthia*.

Inside the entrance, Messrs. KELWAY AND SON filled a whole length of tabling with very good varieties. Amongst their large-flowered sorts we especially noted *King of Gladioli*, deep pink with white blotch; *Darkness*, crimson maroon; *Queen Maud*, soft salmon-pink; *H. B. Stallard*, rich pink with a creamy centre; *Mrs. Cely Trevilian*, blush-pink; *Snowbird*, white; *Craganour*, rose-pink, shaded purple; and *Lady Young*, rosy-mauve with yellow centre.

A large collection set up by Messrs. K. VEILTHUYS AND CO., included good spikes of *Red Star*; *Mr. Mark*, violet, splashed with white at the base; *Veilchenbleu*, blue and violet shades; *Restauration*, scarlet; *Sarah Bernhardt*, salmon with a crimson blotch; and *Proserpine*. Messrs. KONIJNENBERG AND MARK included lovely spikes of the following in their collection: *C. H. Dickens*, deep rose flushed with purple; *Imperator*, a large white sort *Ophelia*, Apple blossom pink; *Magnolia*,

white with a few carmine lines deep in the flower; and *Pfitzer's Triumph*, a large, deep salmon-pink.

In an attractive group arranged by Messrs. J. J. GRULLEMANS AND SONS we noted *Autumn Queen*, white flaked with crimson; *Louise*, lilac shades; and *Pride of Haarlem*, bright pink. In another part of the hall they showed some good seedlings and *Red Star*, Dr. Norton, *White Glory* and *King George*.

A very choice collection was staged by the ORPINGTON NURSERIES CO., and this included a beautiful orange and salmon-coloured seedling; *Odin*, a large salmon-pink flower with crimson-lake blotch; *Marshall Foch*, a very large lilac variety with rosy lines at the base; and *Red Emperor*. *Primulus* hybrids were mostly shown by Messrs. STOUTERBEEK VAN TIL, LTD., and amongst these there were charming vases of *Orange Queen*, *Yellow Hammer*, *Athalia*, *L'Innocence*, *Nanthea*, and *Souvenir*.

The Foremarke Cup, which is annually offered for twenty spikes of named Gladioli, in not fewer than ten varieties and grown by the exhibitor, attracted only one exhibit, but this was of such excellence that the judges could have had no hesitation in awarding the cup. This splendid collection shown by Messrs. GEO. MAIR AND SONS, included *Queen Mary*, *Duchess of York*, *Jean Mair*, *Peach Blossom*, *Kyle*, and *King George*.

Roses were shown in variety and of good quality by Messrs. CHAPLIN BROS., and by the Rev. J. H. PEMBERTON. The former had lovely vases of *Mabel Morse*, *Lady Inchiquin*, *Mrs. Henry Bowles*, and *Captain H. S. Hervey Cant*. Chief amongst the last-named collection were *Vanity*, *The Adjutant*, *Mermaid*, and *Golden Emblem*.

The customary collections of Carnations were shown by Mr. C. ENGELMANN, Messrs. ALLWOOD BROS., and Messrs. STUART LOW AND CO. The former had an interesting vase of seedlings, while the most attractive varieties generally were *Maine Sunshine*, *Janet*, *Red Laddie*, and the sweetly-scented *Mauve Queen*.

Dahlias were shown in considerable quantity by Messrs. CARTER PAGE AND CO., Messrs. J. CHEAL AND SONS, and Mr. J. WEST, who had collections of general interest which included most of the different types. Messrs. J. STREDWICK AND SON had a small collection of Cactus varieties, and Mr. H. HEMSLEY showed a few vases with his fruit exhibit.

General border flowers were exhibited by Messrs. M. PRICHARD AND SONS, who included several batches of dwarf *Campulinas*, particularly varieties of *C. pumila*; *Rudbeckias*, *Heleniums* and *Kniphofias*; by Mr. G. REUTHE, who also showed flowering branches of *Eucryphia cordifolia*, *Solanum jasminoides*, *Berberis coralina*, and *Hydrangea Sargentiana*.

A good collection of herbaceous *Lobelias* was displayed by Messrs. B. LADHAMS, LTD., and of these *Mrs. Humbert*, pink; *Magnificent*, crimson; *Purple Emperor*, and *L. syphiliticum grandiflora* were especially noteworthy. The Misses HOPKINS staged a pretty collection of hardy flowers, including Gladioli.

In an exhibit arranged by Mr. F. C. WOOD there were good vases of *Physostegia* (*Dracocephalum*) *virginiana*, herbaceous *Phloxes*, *Tamarix pentandra*, and various *Heleniums*.

Fruit and Vegetable Committee.

Present: Messrs. A. H. Pearson (in the chair) J. Cheal, H. S. Rivers, W. Poupart, W. G. Lobjoit, H. V. Taylor, S. B. Dicks, A. Bullock, Geo. F. Tinley, E. Neal, F. Jordan, E. Beckett, J. C. Allgrove, W. H. Divers, J. Basham, E. A. Bunyard, and A. N. Rawes.

A few subjects were submitted for awards, including a Tomato and several new Apples, but none was considered superior to varieties already in cultivation.

Messrs. VEITCH AND SON, Exeter, sent specimens of the Apple-shaped Cucumber which they received from Australia. The curious shape of the fruit is interesting, but apart from that the novelty has little to recommend it to the notice of growers.

The most important collection was a group of pot fruit trees and gathered Apples and Plums shown by Mr. J. C. ALLGROVE, Middle

Green Nursery, Langley, Slough. The trees were perfect specimens, dwarf, well-shaped, and heavily cropped. They included *Peaches*, *Plums*, *Apples*, and *Figs*. The *Plums* were the most numerous and they included the varieties *Count Althann's Gage*, *Kirke's*, *Allgrove's Superb*, *Jefferson*, *Belgian Purple*, and *Denniston's Superb*. The fruits in dishes included such fine early Apples as *St. Everard*, *Langley Pippin*, *Red Victoria*, *Lady Sudeley*, and *Rev. W. Wilkes*; and *Plums* *Old Greengage*, *Denniston's Superb*, *Allgrove's Superb*, *Pond's Seedling*, and *Kirke's*.

Mr. H. HEMSLEY, Crawley, showed some excellent Apples, *Peaches* and *Plums*. The large *Gloria Mundi* Apple made a conspicuous dish, and there were others of *Beauty of Bath*, *Lady Sudeley*, *Worcester Pearmain*, and *Stirling Castle*, equally good. Choice fruits of *Belle de Louvain*, *Prince of Wales*, and *Victoria Plums* were also shown.

Messrs. DANIELL BROS., again showed *Black Currant* *September Black*, and Messrs. LAXTON BROS., again exhibited the *Veitchberry*, together with some new early Apples of their raising.

In the competition for the Bunyard Medals for Plums Mr. R. STAWARD, Ware Park Gardens, Ware, was the only exhibitor. The exhibit, however, was very meritorious, and was awarded the Silver Bunyard Medal. The varieties were *Coe's Golden Drop*, *Washington*, *Late Gage*, *Green Gage*, *Monarch*, *Giant Prune*, *Jefferson*, *Cox's Emperor*, *Pond's Seedling*, *Kirke's*, *Belle de Louvain*, *Count Althann's Gage*, *Primate*, and *Black Diamond*.

SCOTTISH PANSY AND VIOLA.

At the annual meeting of this association held recently in Glasgow, Major R. S. Milne, Bridge of Weir, and Mr. W. Dobbie, Renfrew, were elected President and Hon. Secretary respectively. The financial statement for the past year showed a small credit balance. No fewer than eleven seedling fancy Pansies, thirteen seedling Violas and three bedding Violas were staged for certificate honours. Three blooms of each were shown on collars, while the bedding specimens were represented by plants in bloom. Certificates of Merit were awarded to the following varieties:—Fancy Pansies: *James Cochrane*, *John Martin*, *Mrs. John Cameron*, and *Mrs. Isaac Whiteford*, grown by Mr. ALEXANDER COCHRANE, Fouldhouse, and *David Lindsay*, grown by Mr. WILLIAM LINDSAY, Dunaskin. Violas:—*James Siveurright*, *Abbey Craig*, and *Isobel*, grown by Mr. WILLIAM HOWIE, Barhead; *May Raeburn*, *Peggy Trail*, and *Betty Whiteford*, grown by Mr. ALEX. COCHRANE, and *Kate Mackie* grown by Mr. WILLIAM DAVIDSON, Dunaskin. Bedding Viola, *Carluka Bedder*, grown by Mr. QUINTEN, McFadyean, Carluka. Certificates were also given to an unnamed Pansy and Viola seedling grown by Mr. ALEX. OLLAR, Campbeltown. The most meritorious bloom in the fancy class was *Mrs. Whiteford*, a bold, smooth flower, with Plum blotch and margin of creamy white suffused carmine, while the best novelty among the Violas was *James Siveurright*, a pale cream on lemon ground bloom with a broad blue band. Two seedling Pansies sent by Mr. E. CLEGG, Dewsbury, did not qualify, although one of them obtained a First Class Certificate at Saltair.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly meeting of this Society was held in the R.H.S. Hall, on Monday, August 10, Mr. T. R. Butler presiding.

Six new members were elected. Two members withdrew interest from their deposit accounts amounting to £6 19s. 10d.

The sick pay for the month on the ordinary side amounted to £61 12s. 7d., that for the State Section, £30 14s. 10d., while £2 was paid for a maternity claim.

Grants were made to seven members amounting to £31 13s. 3d., for dental and optical treatment, and seven other cases were considered.

SOUTHPORT FLOWER SHOW.

AUGUST 26, 27 and 28.—In the matter of Flower Shows, Southport has excelled itself. In 1924 Southport held what was the greatest first-time effort we have known, and as splendid as it was great. On this occasion—the second effort—there were over a thousand more entries than in 1924, consequently an extra span had to be added to the huge Chelsea-like canvas erection, while an additional large marquee had to be put up to hold the numerous entries in the classes for floral designs. Altogether the part of the show under canvas covered an area of one-and-three-quarter acres. The disposition of the exhibits in the great tent showed a marked improvement as compared with the arrangement of a year ago; the wide central area, with its large exhibits arranged on the ground, added materially to the general effect of the show. In this and many other ways the Flower Show Committee of the Corporation of Southport has shown remarkable promptitude in carrying out useful suggestions, an aptitude to learn those lessons which experience teaches, and a readiness to take advantage of good ideas discovered during visits to Chelsea, York, Wolverhampton, Shrewsbury and other great shows, and also an initiative and enterprise in the creation of new and interesting classes.

But in the creation and conduct of a great show the Southport authorities—it is a show run quite frankly by the Corporation as an additional high-class advertisement of a very beautiful town—have created an atmosphere which is so delightfully attractive that every exhibitor desires to come again. Nothing is too much trouble, and everyone in authority, from the Mayor downwards, does all that is possible for the exhibitors, the judges and the press, consequently everything runs smoothly, and everyone is happy. There is a welcome for all who take any part in Southport Show, and even the hard-worked Secretary, Mr. T. Wolstenholme, and the equally busy Show Superintendent, Mr. W. Clark (who is also Superintendent of the Corporation Parks and Open Spaces), appear as bright and cheerful as though "the greatest show in the provinces" was a very pleasant little "extra" in their round of duties. Councillor R. Clayton and Alderman E. Wood, respectively Chairman and Vice-Chairman of the Flower Show Committee, are unfailingly kind and helpful, and have the happy knack of making everyone feel "at home." Whether the "air" of Southport has anything to do with it we cannot state, but we are firmly convinced that the "atmosphere" created by the committee and officials is in large measure responsible for the fine success they have achieved.

The Show was held, as last year, in Victoria Park, where a wide and half-mile long herbaceous border is a famous feature. The site is in every way suitable and convenient. For the encouragement of competitors cash and other prizes to the value of over £2,900 were offered in a schedule of two hundred and sixty-six classes.

A few of the leading features of the show were the two great-group classes and these provided a grand avenue of colour and a display of finely grown plants admirably arranged. The hardy plant groups were very colourful and showed an advance in arrangement. Roses provided fragrance, colour, and fine form; Gladioli contributed a striking feature of stateliness; the table decorations were a source of continual interest and pleasure; the rock gardens, although sombre, attracted considerable attention, while fruits and vegetables were shown in fine style and great extent.

The best non-competitive exhibit in the show was the splendid group of vegetables shown by The Hon. VICARY GIBBS (gr. Mr. E. Beckett), and this received the Silver Challenge Trophy, value £75, presented by *The People*. The best competitive exhibit in the show, and to which the Sir John Brunner Trophy was awarded, was the contribution of Orchids

in Class 17, set up by Messrs. J. AND A. McBEAN, Cooksbridge. The *Gardeners' Chronicle* Medal was also awarded to The Hon. VICARY GIBBS.

We hope to publish a fuller report in our forthcoming issue; distance from town and the early hour at which we have to go to press have prevented any further comment in the present issue. At midday the weather was overcast following rain in the early morning, but there were crowds of people present, giving promise of greater financial results than in 1924. At the time this report left Southport the awards to trade displays were not complete, but we would add that the trade displays were very fine and numerous.

GROUPS.

The big group class at Southport is one of the great attractions. The schedule requires a display of flowering and foliage plants arranged for effect upon a space of 300 square feet and the premier award consists of the £50 Challenge Trophy presented by the Southport Theatres and Cinemas, and a cash award of £50. This was won, as last year, by Messrs. J. CYPHER AND SONS, Cheltenham, with a beautiful exhibit that excelled in grace and colour. Palms, Codiaeums, Liliiums, Humeas, *Francia ramosa*, and various Orchids were delightfully disposed to make up a bright and graceful whole. The inclusion of two large plants of *Clerodendron Balfourii* was a somewhat daring innovation, but these plants proved great points of attraction in a finely finished exhibit. Mr. W. HOLMES, Chesterfield, won the second prize with a capital display in which his finely-grown specimens of Prince of Wales Codiaum were a superb feature; his was a beautifully bright contribution in which Liliiums and *Francia ramosa* lent grace, and Orchids gave additional colour. Sir G. KENRICK (gr. Mr. V. J. Macdonald), Edgbaston, was third and Mr. T. M. PETER, Great Horton, Bradford, fourth.

In the class for a group of foliage plants Mr. W. A. HOLMES led with a fine exhibit wherein Codiaeums were of superb quality and finely arranged with Palms, Alocasias, Rex Begonias, Dracaenas, *Nandina domestica* and Ferns; second, Messrs. J. CYPHER AND SONS, whose exhibit was a trifle lacking in colour; third, Sir G. H. KENRICK, whose group was somewhat sombre; fourth, Mr. J. H. ANDERSON, Southport, who used large Ferns, Caladiums and Marantas in his somewhat unique display.

Messrs. PRICHARD AND SON, Christchurch, excelled in the class for a large collection of hardy flowers, and their display was brilliant with Kniphofias; second, Messrs. BEES, who relied over much on Liliiums and Gladioli.

Messrs. W. ARTINDALE AND SON, Sheffield, led for Gladioli with a superb exhibit; second, Mr. A. EDWARDS, Fordham, and third Messrs. BEES, LTD.

KINGS WALDEN BURY.

THE twenty-fifth exhibition of this Society took place in beautiful weather on Wednesday, August 5. The Bury Pleasure Grounds were thrown open to the public in conjunction with the show. The inhabitants of Letchworth, Hitchin, Welwyn and Luton appear to appreciate this privilege, and visit the show in increasing numbers each year. The more important horticultural exhibits were placed in one large tent. Here Messrs. HARKNESS AND CO., and Messrs. WHEELER made attractive exhibits of Roses. Messrs. W. CUTBUSH AND SON, Barnet, covered one-hundred-and-forty feet ground space with a display of cut flowers, principally of hardy herbaceous plants. Other attractive exhibits included vegetable and fruit collections, and a collection of named Phloxes from MAJOR HARRISON's gardens. The competitive classes attracted satisfactory numbers of exhibits.

DUMBARTONSHIRE SWEET PEA.

THE eighth annual show of the above Society was held at Dumbarton on the 8th inst., under favourable auspices. The entries exceeded in number those of 1924, and the quality of the flowers was of a high standard in both the gardeners' and amateurs' classes.

Mr. GEORGE BALLINGALL who won the Burpee Cup at the Glasgow Show was again prominent in the prize list. He was first for twelve vases in the open section with choice examples, among others of Wembley, Picture, Youth, Matchless, Mammoth, and Elegance, the last of which received the special award offered for the best vase in the Show, while in the Gardeners' and Amateurs' Section, he carried off the leading honours for nine, six and three vases respectively. He also staged the best cerise and cream-pink varieties, in the single vase competition, and completed a splendid record by staging a bowl of Sweet Peas which received special mention by the judges, as it was a feature of the Show. The flowers were conspicuous by their bright, good colour, and artistic arrangement.

In the Amateurs' Section the honours were shared by Messrs. E. WATKINSON, RENTON, JAMES MALTMAN, SHANDON, GEORGE BLACKIE, Dumbarton, and JOHN MCGOWAN, Alexandria.

Not only were Roses more numerous, but the quality was better than it has been for several years past. Mr. WILLIAM CARRUTHERS, Cardross, excelled in the class for three vases, and his vase of Mrs. Henry Bowles was placed first in the class for pink Roses. In the red and white classes Mr. WILLIAM HOLMES, Helensburgh, excelled, while Mr. CHARLES MACLACHLAN, Helensburgh succeeded in the class for three vases and for a single vase of a pink variety showing the variety Mrs. Henry Bowles. As an amateur effort, the single vase of nine distinct varieties staged by Miss MCBETH, Alexandria, was most commendable, the outstanding blooms being General McArthur, Lieut. Chauré, J. L. Mock, Lyon, and Madame A. Chatenay.

Keen competition resulted in the Carnation classes. Mr. JAMES SMITH, Darvel, and Mr. WILLIAM CARRUTHERS were placed first and second in the class for six vases of border varieties, but the positions were reversed in the competition for three vases. Mr. SMITH included a vase of Skirmisher that was judged to be the best Carnation in the Show.

SCOTTISH BEEKEEPERS.

THE arrival in Glasgow during the past few weeks of fifty tons of comb honey which was being sold at 1/9 per section, and the serious consequence that would result to Scottish Beekeepers from that competition was the subject of discussion at a meeting of the Scottish Beekeepers' Association, held recently at Glasgow. Mr. James Cochrane, Kilmarnock, presided.

The question was raised by Mr. A. Blair in connection with a report submitted by the Markets Committee of the Association. He said the American honey was in good condition and that the frame was stamped with the registered number of the apiary and the weight of the honey contained in each section, and he predicted that America would capture the market unless the Scottish Beekeepers could bring pressure to bear on the railway companies to carry their honey better. He also advocated legislation which would ensure that all honey from America should be marked "foreign honey."

Mr. Leith, Aberdeen, said that the quality of honey imported from America was not up to the standard of that produced in Scotland, and it was up to them to protect themselves because the public, on buying from the grocer, did not know whether the honey was foreign or not.

A resolution by the Edinburgh Beekeepers' Association urging legislation to deal with bee diseases was held over for consideration at the Dundee meeting.

Mr. John Anderson, Aberdeen, afterwards delivered a lecture on "Jettison and Discords."

MONTROSE JUBILEE EXHIBITION.

AUGUST 21 and 22.—For fifty years the Montrose and District Horticultural Society has done commendable work in fostering a love of horticulture in and for miles around Montrose. The results of these are finely reflected in the magnificent public gardens of the town, which have earned for it the title of "The Garden City by the Sea." The Society during its career has been greatly indebted to the landed gentry in the surrounding districts for the fine support afforded it, this enabling it to accomplish a record few societies could beat. It was fitting, therefore, when the Jubilee year came round that all records should be broken in the number of entries—over one thousand—and in the fine quality reached in all the sections. The prize money on this occasion was increased by fifty per cent., while there were nine trophies and many medals, gold and silver, awarded. The Countess of Strathmore, who had always proved a good friend to the Society, opened the proceedings, the venue being the spacious Drill and Recreation Halls, Montrose. Mr. J. Drummond-Smith, the Secretary, ably backed up by a large and enthusiastic committee, left nothing undone to ensure the success of the exhibition.

The show was a particularly meritorious one, and in all departments an unusually high standard was reached. Outstanding features were the fine displays of cut flowers and vegetables. While we hear of Roses suffering greatly from the green-fly in the south this season, that certainly was not the case at Montrose. Nothing could have exceeded the fine display made in this section, and they excelled in beauty the Sweet Peas shown. Prominent nurserymen and seedsmen vied with each other in the fine show of Roses.

Owing to the season being so well advanced, and the fruit smaller owing to the prolonged drought, this section was not quite so strong, with one or two notable exceptions.

Vegetables were finely represented, the chief prize-winning collection evoking the warmest admiration.

The following were the leading awards:—Silver Challenge Cup for the best exhibit in the show went to LIEUT.-COL. HEW H. BLAIR-IMRIE, C.M.G., Lunan House, Montrose (gr. Mr. James Mitchell), for an admirable collection of vegetables. It was also awarded the much coveted Affiliated Societies' Medal, in Gold, of the Royal Horticultural Society, London, and likewise carried off the Miss Isobel K. Gordon's Jubilee Cup offered for the best collection of vegetables.

The Adamson Jubilee Silver Cup for the best collection of fruit was won with a capital entry from Macclesden Gardens, Brechin (gr. Mr. ALEX. TAYLOR).

The Silver Challenge Medal for the best collection of hardy fruits went to Mr. HERBERT LYALL, Old Montrose (gr. Mr. Robert Duncan) for a much admired entry.

The Lady Baxter Cup for the best collection of vegetables (amateurs) was worthily won by Mr. A. C. DURIE, Montrose Street, Brechin.

The Lady Baxter Silver Vase for Sweet Peas (open class) went to Mr. HERBERT LYALL, Old Montrose, for a finely grown entry.

The Silver Challenge Cup for Chrysanthemums (open class) was awarded to Mr. JAMES PATERSON, Aberdeen, for finely-grown specimens.

The Nurserymen's Silver Challenge Cup deservedly went to Mr. JAMES CONNOCHIE, Montrose.

The Challenge Cup for Amateurs was gained by Mr. STANLEY SCOTT, Montrose, for the best table (six feet by four feet) of greenhouse plants, flower or foliage plants, arranged for effect.

Messrs. Dobbie's (Edinburgh) Gold Medal for most points in the horticultural classes was awarded Mr. HERBERT LYALL, Old Montrose.

The following well-known firms were awarded Silver Jubilee Medals by the Society in appreciation of their fine non-competitive exhibits:—Messrs. W. SMITH AND SON, Aberdeen; Messrs. BEN REID AND CO., Aberdeen; Messrs. D. AND W. CROLL, Dundee; and Messrs. LAIRD AND SINCLAIR, Dundee.

Mention must be made of the magnificent

collection of fruit, flowers and vegetables, sent in by CAPTAIN STANFIELD, Dunninald Castle, Forfarshire, for exhibition.

Everything went off splendidly, and all concerned are to be highly congratulated on the fine success which attended their efforts.

LITHAM (FIFE) HORTICULTURAL.

MRS. BURNETT SMITH (Annie S. Swan) formally opened the annual exhibition of this Society on Saturday, when the principal prizes were won as follows:—Sir Thomas Paxton Challenge Cup for most points in the vegetable section, Mr. PETER GRAY, The Mount; Pot Plants and Cut Flowers (most points) Mrs. MCINTOSH, Monimail; Balfour Cup for most points in the Gardeners' section, Mr. JOHN CLARK, Lochiehead, Auchtermuchty; open Sweet Pea competition, Mr. J. SMITH, Crawford Priory; twelve Roses, Mr. JOHN CLARK, Lochiehead; collection of vegetables (ten varieties) Mr. J. CLARK.

PERTH HORTICULTURAL.

At the annual show of this Society held on the 19th and 20th inst., the number of exhibits was much larger than that of last year, and the displays of fruits, cut flowers and plants was particularly good.

Breadalbane Horticultural Society won the Victory Cup and Medal offered for the best collection of vegetables, while the Almondvalley Horticultural Society as runners up was awarded a Silver Medal. The principal individual awards were as follow:—silver cup for twelve varieties of Sweet Peas, Mr. JAMES KENNEDY, Moness Gardens, Aberfeldy; silver challenge cup for a collection of hardy fruit, silver rose bowl for decorated dessert table, and silver cup for collection of fruit, Mr. JOHN MCGREGOR, gardener to the Earl of Moray, Kinfauns Castle; silver cup for six varieties of Roses, Mr. D. POWRIE, Junior, Aberdeen; silver cup for Border Carnations, Mr. W. H. SCOTT, Perth; silver cup for three varieties of Roses, Mr. J. WEBSTER, Perth; silver cup for cut flowers, Mr. W. J. TUCKER, Perth.

Trade exhibits were unusually numerous and formed an attractive feature of the show. The following firms were awarded Gold Medals: Messrs. STORRIE AND STORRIE, Glencarse, for fruit and flowering plants; Messrs. D. AND W. CROLL, Dundee, for Roses; Messrs. THOMAS SMITH AND SONS, Stranraer, for Roses; THE CARSE OF GOWRIE NURSERY CO., Errol, for fruit; Messrs. THYNE AND SONS, Dundee, for Roses, Gladioli, etc.; Messrs. ZAND AND DICKSON, Edinburgh, for Alpine plants; Messrs. AUSTIN AND MCASLAN, Glasgow, for Roses, etc.; Messrs. ALEXANDER AND BROWN, Perth, for floral designs.

ROTHESAY HORTICULTURAL.

THE feature of the annual show held at Rothesay, on Wednesday, the 19th inst., was the remarkable success of Mr. JOHN DAVIDSON, gardener to Sir John Reid, Ardenraigh. In the open section for cut flowers he was first for three decorative Roses, for six double Begonias, for six vases of herbaceous flowers, for six Phloxes, for six annuals, for nine vases of cut flowers, for three foliage plants, for three greenhouse plants, for three tuberous Begonias, for Petunias, for three Coleus, for three exotic Ferns, for three British Ferns, and for Aspidistras. In the fruit classes he also carried off most of the chief honours, being placed first for six Apples, Red Currants, a Melon, a collection of fruit, and the best bunch of Grapes in the show, while in the vegetable classes he excelled in the classes for twenty-four and twelve Tomatoes, two Cucumbers, six white and six yellow Turnips and twelve pods of French Beans, and in the restricted section he added to the long list of successes by winning first prizes for six Gladioli, twelve red and twelve green Gooseberries.

The next successful competitor was Mr.

DUNCAN MCFIE, Kames Castle. He was first for six Pompon Dahlias, for four Dahlias, for six Pentstemons, for three Zonal Pelargoniums, for one light and one dark Fuchsia, for two Vegetable Marrows, for six Leeks, for six Onions, for three heads of Celery, for a collection of vegetables, for a hand bouquet, and for two Cabbages.

The remaining honours were shared by Mr. H. HARPER, Kilmalcolm; Mr. JOHN HOOD, Rothesay; Mr. JOHN WALKER, Ascog; Mr. HENRY BEGG, Ascogbank; and Mr. WILLIAM McMILLAN, Rothesay.

In the amateurs' classes Mr. C. STEWART won several first prizes; and Mr. JOHN SPIERS, four.

WIGTOWNSHIRE HORTICULTURAL.

THE annual exhibition which was held at Stanraer, on Friday, the 21st inst., was formally opened by Sir Thomas Inskip, K.C., M.P., Solicitor-General. The most successful exhibitor was Mr. JOSEPH DEVOY, Stanraer, where principal honours were won with two vases of Chrysanthemums, twelve blooms of Begonias, one vase of Asters, two Fuchsias, two Chrysanthemums, two Begonias, single, two Begonias, double, three Beet, and the collection of vegetables in both the gardeners' and amateurs' classes. Mr. T. B. CHALMERS, Barsolus, scored with twelve blooms of Roses, while Mr. R. H. COCKBURN excelled in the Grape classes, being placed first for two bunches of black and white, six bunches of white, and two bunches black Hambro. He was also first for twelve culinary Apples, and for a collection of Potatoes. Mr. R. M. ADAIR, Stanraer, excelled in the Apple classes, and Mr. R. W. RYE, Zochinch Gardens, was successful with six Nectarines, a Melon, six Figs, and a collection of fruit.

TRADE MARKS.

THE following list of latest Trade Marks, published is specially prepared for *The Gardeners' Chronicle*, by Messrs. Rayner and Co., Registered Patent and Trade Mark Agents, of 5, Chancery Lane, London, who will give all information free regarding the Registration of British and Foreign Trade Marks.

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453,782.—Illustration of Squirrel for Spades, Shovels, Picks, Hoes, Forks (Agricultural and Horticultural), etc. John Yates and Co., Ltd., Exchange Works, Rocky Lane, Aston Manor, Birmingham. August 19, 1925.

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FERTILITE.

B455,133.—A Fertiliser. The Worcestershire Fertiliser Co., Ltd., Canal Works, Hanbury Road, Stoke Prior, near Bromsgrove, Worcestershire. Aug. 12, 1925.

BEAUFLORES.

459,844.—Cut flowers and Plants. Archibald Thomson & Co., trading as Beauflores, 115, Princes Street, Edinburgh, Scotland. Aug. 12, 1925.

JACKURPI.

459,884.—Agricultural and Horticultural Implements and Parts thereof. Sydney Odling Jackson, Gatonga Tea Estate Gatonga, Assam, British India. Aug. 5, 1925.

The above Marks have been "accepted" by H.M. Patent Office and unless any objection is lodged the Marks will be duly Registered.

ANSWERS TO CORRESPONDENTS.

CORRECTION: Mr. John F. Hanmer, gardener to P. Craven, Esq., Pinewood, Conway, informs us that he won chief honours in the open class for 6 Peaches at Shrewsbury, and not Lieut.-Col. Dickson as stated in our report on p. 159.

CAMPANULA SEEDLING. *G. M.* The seedling *Campanula* exhibits a graceful and useful type, but it is difficult, in the absence of opportunities for comparison, to state how it differs from some of the newer forms. It is a charming plant, and the flowers, each the size of those of *Telham Beauty*, have a bluish-mauve colouring which is very pleasing, and also, at the moment fashionable.

HYDRANGEAS. *E. B.* (1) *Hydrangeas* should be pruned after flowering in summer. (2) Shorten them to fairly firm stems, keeping in mind a well-balanced and shapely bush. (3) Provided the plants are in good soil, and a mulching of rich soil or old decayed manure is given annually in spring, they may be expected to flower annually for a number of years. (4) It is generally understood that *Hydrangeas* growing in soils containing appreciable quantities of lime do not produce blue flowers. The excellent chemical preparation to feed the plants with to obtain the blue colour is *Cyanol*, sold by Messrs. W. Wood and Sons, Taplow. (5) *Cistus* is not, as a rule, a long-lived shrub, and for this reason, growers maintain a stock of young plants by inserting cuttings at intervals of two or three years.

MELON EARL'S FAVOURITE. *W. J. B.* It is rather unusual for all the plants of *Earl's Favourite* Melon to be barren, especially as the other varieties have done so well; your cultural details appear to be quite correct. If you allow the sub-laterals to extend instead of pinching them at the first joint, this variety will set fruits as readily as the other varieties.

MENTHOL. *L. Hawkins.* Japan Mint is a variety of *Mentha arvensis*, and may well be named *M. a. piperascens*, because it is known as Japan Peppermint. The Japanese name for it is *Akamaru*, but other varieties are grown in Japan. No variety of *M. arvensis* is grown in British nurseries; but Messrs. Jackson and Co. (Mitcham Road), Ltd., West Croydon, Surrey, might inform you whether it has been tried in this country, and whether or not they could supply you with plants. *The Book of Herbs* by Lady Rosalind Northcote, price 4s., post free, may be obtained from our publishing department, though it is not strictly a medicinal book. We are not aware if a leaflet on the cultivation of Peppermint is issued by the Board of Agriculture. Peppermint is grown in this country on dry, chalky lands for the production of oil, because a moderate production of stem and leaf contains more oil glands in proportion to the bulk than if the Peppermint were grown on rich, moist or manured soil. Spearmint is grown by market gardeners on rich soils, but not for the oil. The best Peppermint oil is obtained from *Mentha piperita officinalis* (White Peppermint). Both this and *M. piperita vulgaris* (Black Peppermint) are, or have been, grown at Mitcham, Surrey. Menthol or Peppermint Camphor is the crystalline portion of the oil of Japan Peppermint.

NAMES OF PLANTS; *R. I. H.* *Spiraea Douglasii*, *H. E. G.* 1, missing; 2, *Spiraea Anthony Waterer*; 3, *S. Douglasii*; 4, *Hypericum calycinum*; 5, *Polygonum Baldschuanicum*; 6, *Spiraea Aitchisonii*; 7, *Berberis dietyophylla*; 8, *Diostea juncea*; 9, *Æsculus parviflora*; 10, *Veronica angustifolia*. *J. P. O. D.* 1, *Jacobinia pauciflora* (syn. *Libonia floribunda*); 2, *Begonia fuchsoides* var. *elegans*; 3, *Lapeyrousia cruenta*; 4, *Asplenium botusatum*; 5, *Doronicum plantagineum*. *G. A. H.* 1. *Thymus serpyllum*; 2, *Helichrysum bellidifolium*; 3, *Acaena inermis*; 4, *Daboecia polifolia*;

5, *Potentilla nepalensis*; 6, *Santolina Chamaecyparissus*. *L. G. P.* *Hydrangea arborescens* variety. *G. P. S.* 1, *Rubus phoenicolasius*; 2, *Prunus lusitanica* variety; *Ophiopogon Jaburan*.

PERGOLA PATH. *G. A. G.* The paved path running under a pergola constructed with stone columns and Oak beams overhead should not be less than five feet wide. The border on each side should be six feet in width and the pillars should be placed in the centre of them. If placed at the edge, the whole structure will lack balance.

PEACH LEAVES DISEASED: *W. H. W.* The Peach leaves are affected with the fungus *Cercospora circumscissa*, commonly known as Shot-hole disease. Gather and burn all the diseased leaves and spray the trees with self-boiled lime and sulphur compound.

PLAQUE OF GNATS IN A PUBLIC PARK. *A. C.* We fear that gnats (midges) could never be destroyed in sufficient numbers by fumigating or spraying to make either of these an economic proposition in combating the nuisance you complain of. We have made enquiries, but cannot find that any Public Parks Authority in this country has taken definite steps to exterminate these pests. Gnats, sometimes called mosquitos, belong to the genus *Culex*, every species of which passes its larval stage in stagnant pools or ditches. If the surface of the water in such places could be covered with a thin film of oil, the larvae of the gnats which have to come up to the air to breathe, would be suffocated and thus destroyed. This is one of the methods adopted so successfully in tropical countries to destroy the malaria infested mosquito. We fully appreciate, however, that individual action would be quite futile, and even if you treated the pools under your charge successfully, millions of gnats would be bred in the adjoining property, which would still prove a plague to the whole neighbourhood. We are of opinion that the annoyance caused by the gnats in the park under your control can only be mitigated by visitors themselves applying lotions or salves (of which there are numbers now on the market) to the exposed parts of their bodies. If visitors are warned of the inconvenience they are likely to suffer, they will no doubt come to your band performances properly prepared. Should you continue your experiments, we shall be glad to hear the results, as many of our readers must be faced with similar difficulties to your own.

PROPAGATING DAHLIAS. *R. W. B. (N.Y.)* Dahlia propagation is carried out largely in this country by those nurserymen who make a speciality of the plant. Large numbers of amateurs produce their own plants, for nearly every amateur gardener possesses a greenhouse, so there is no difficulty in the matter. The bulk of the Dahlias produced in this country are sold as green plants during April, May and June, while large quantities are sold for export and home use, as pot tubers, from October to the following April. Propagating by division of the old tubers as practised in the U.S.A. is practically unknown here, for no nurseryman devotes the acreage to the Dahlia that would be necessary to produce sufficient plants for division. This method of propagation is adopted in the U.S.A. because green plants would be unsuitable for travelling the immense distances they have to be sent by rail. They might, however, adopt the "pot tuber" method as this would reduce the weight and bulk and such plants give equally satisfactory results. The procedure in this country is to bring the tubers into a heated greenhouse early in January, placing them on a bench and partially covering them with soil, leaf-mould, ashes, cocoanut fibre refuse or sawdust. Any of these materials will answer the purpose; the base of the stem, or crown as it is termed, should not be covered, but left exposed so that the young growths may be cut off so soon as they are ready. The first

cuttings are ready to be taken in February, though all varieties are not ready at once, in fact, they are very irregular in starting. The cuttings are severed from the old tubers with a sharp knife, and inserted so soon as possible. Where small quantities are required placing one cutting in a two-and-a-half-inch pot is best, as there is no further trouble in repotting them. Where room is limited, your cuttings may be placed close to the rim of a pot of the same size, though where large quantities are required the cuttings are just dibbled in rows on a trench of soil or cocoanut fibre refuse and so soon as rooted they are placed in small pots. Any ordinary compost may be used; elaborate mixtures of soil are unnecessary and a waste of time. The chief difficulty in propagating Dahlias is to regulate the temperature in the house, for although the cuttings require a good brisk heat in the soil, the temperature of the air should be kept very much lower or the cuttings will damp off at the base. The air temperature is not difficult to manage in the early part of the season, and it can be regulated later by placing a light shading on the glass and opening the ventilators. In fact, the cooler the air is kept, the better will the cuttings root. All cuttings should be potted singly in two-and-a-half-inch pots so soon as they are rooted, using a compost of three parts loam, one part leaf-soil or old decayed manure, and just sufficient sand or similar material to keep the mixture free and open. Crocks for drainage are not required. The young plants are then grown in cool houses or frames until planting time. To produce pot tubers, the young plants are left in the pots all the season until the growth is cut down by frost, when they are removed, and the tubers housed in the pots, safe from frost. After being ripened, the tubers are turned out of the pots and preserved like all similar subjects during the winter. Cuttings rooted late in the season will not make good pot tubers, as they have not sufficient time to do so.

SHRIVELLING AND STONE SPLITTING IN PEACHES AND NECTARINES. *L. R. and Peach Grower.* Shrivelling of Nectarine fruits is often caused by late syringings, therefore syringing should always be performed in time to allow the fruits and foliage to become dry during the hours of daylight. Cold spring water should not be used for syringing when the sun heat is powerful. Stone splitting is caused by a lack of lime in the soil and by the roots entering a cold, uncongenial subsoil. This evil may be cured by careful attention to drainage, and by lifting and placing the roots in genial soil. Lift the roots in the autumn, and in the meantime prepare the corrective agents, which may consist of old plaster, old lime and brick rubble, burnt earth, etc. Add one part of these materials, with a fair sprinkling of bone meal, to a rather strong calcareous loam. Make the border firm, and there should then be no further trouble with stone splitting.

CATALOGUES RECEIVED.

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CHAS. WRIGHT, Tackley, Essex.—Roses and fruit trees.
JAMES CARTER AND CO., Raynes Park, S.W. 20—Lawns and sports grounds.

Foreign.

W. C. ROOZEN AND CO., LTD., Overveen, Haarlem, Holland.—Bulbs.



ROSE DAINTY BESS.

THE Gardeners' Chronicle

No. 2019.—SATURDAY, SEPT. 5, 1925.

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Rose Dainty Bess.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 59.7.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 2, 10 a.m. Bar. 30.2, temp. 62°. Weather, Bright.

Tuber mutations in Potatoes.

THERE are on record not a few observations of well marked and permanent changes of tuber-colour and shape which have arisen in the course of

the normal vegetative propagation of the Potato. The late Mr. Arthur Sutton who took such a great interest in all matters relating to the Potato and whose knowledge of the plant and its cultivation was profound, made a prolonged study of the subject of "bud sports" in the Potato. As a result of his observations Mr. Sutton came to the conclusion that there is no ground for believing that nature has ever given rise to any new and distinct variety of Potato by bud variation. In that conclusion most people of experience in the subject would be inclined to concur. If the conclusion be sound it follows that it is hopeless to attempt to improve races of Potatoes by tuber selection and that the only method whereby improvement may be looked for is by the arduous process of crossing existing races—in fact breeding along Mendelian lines. If, on the

other hand, bud mutations of a permanent kind do occasionally arise, then there would always be the hope and off-chance of a useful and improved variety arising in this manner. Now and again a claim is made that this has been achieved. It is stated, for example, that the blue round variety, Leeland Blue, has yielded colour mutants among which some offer greater resistance to late blight (Phytophthora infestans) than does the type from which the mutants arose. More recently, Dr. Salamon reports* that the variety Field Marshall, which is an Up-to-Date with a russeted skin, differs from the latter, from which it presumably arose as a vegetative sport, in resisting late blight more than does the very susceptible Up-to-Date. These examples, however, cannot by the nature of the case be submitted to critical examination and therefore Dr. Salamon has performed a great service to Potato growers by devoting some years to the investigation of what is undoubtedly the most interesting case of bud mutation in the Potato that has yet been discovered. The mutations in question were observed by Mr. McKelvie, whose acknowledged eminence as a raiser of new varieties is a guarantee of the accuracy of his observations. The sports or bud mutations which Mr. McKelvie has described arose from the self-coloured purple-skinned Arran Victory. Colour sports have indeed often been described; but the striking points of Mr. McKelvie's Arran Victory mutations are, first, that the mutations arose in a gradual and progressive series and, second, that when the colour mutations had gone on to its extreme limit and had resulted in the production of a white tuber with only an occasional splash of colour, other changes also manifested themselves in the mutant. Thus the extreme mutant characterised by white tubers differs from the Arran Victory type, from which, as would seem certain, it arose, not only in colour of tuber, but in colour of haulm. Nor is the difference confined to colour, the haulm of the bud mutant is shorter and the leaflets much narrower than is the case with Arran Victory. In other respects, however,—as for example in flower characters and immunity to Wart disease—mutant and type are alike. Most remarkable, however, is the change which the mutants show with respect to tuber shape. Arran Victory is a true round; but in the course of the progress of colour mutation a typical kidney-shaped tuber arose and finally from the white tubered mutant a true long type of tuber made its appearance. Dr. Salamon has investigated the series of mutants with great care and has studied their several genetical behaviour. He finds that the mutations exhibited in the tubers are, as it were, reflected in the germ cells. With increasing suppression of pigment the plant goes on increasing numbers of germ cells which behave as though they are carrying fewer pigment-producing factors. The practical issue of these observations is clear. If these things can happen once they may happen again and therefore no one need despair of making a lucky find among his Potatoes or discovering a new variety. Those who grow Potatoes, however, know how many are the pitfalls which attend upon the sanguine amateur who thinks that he has made such a find. In the large majority of cases the find turns out to be a rogue. The scientific aspect of Mr. McKelvie's and Dr. Salamon's observations is no less important.

*Genetic studies in Potatoes: McKelvie's Arran Victory Mutations. By R. N. Salamon, M.A., M.D. *Journal of Genetics*. Vol. 15, No. 3, July, 1925.

Do we as we witness the waning of the colour of the tuber have a sign of the part played by the pigment in the general physiology of the plant, and as the pigment gets less, does the physiological state of the plant so change that the Mendelian factors which are apt to be regarded as the most permanent of cell structure—themselves undergo change. This and other questions, though they inevitably arise, cannot at present be answered. We must wait for more information before we may begin to speculate profitably on the significance of these remarkable phenomena of bud variation.

Rose Dainty Bess.—This happily-named Rose won general admiration when it was exhibited at the National Rose Society's Metropolitan Show at the Royal Botanic Society's Gardens, on July 3 of the present year. The flowers are large and single, about four inches in diameter, and of an exquisite shade of pink, but the crowning attraction of this beautiful Rose is the dainty frilling of the margins of the petals. The raiser, an amateur, Mr. W. E. B. Archer, Monks Norton, Sellindge, Ashford, is to be congratulated upon raising such a lovely Rose (see our Supplementary Illustration), and winning a Gold Medal of the N.R.S. for it. The fact that the Royal Horticultural Society granted the variety an Award of Merit on July 14, is additional evidence of the high value placed upon Mr. Archer's novelty.

Revival of Tomatoes in France.—For a time, Tomatoes have been somewhat under a cloud in Paris and other large French towns on account of their supposed indigestibility and predisposition to gout. Two distinguished French physicians have carefully investigated matters concerning the Tomato, and have published a treatise which, amongst other things, states that oxalates, which would be harmful to the rheumatic, are present in Tomatoes in such a small proportion as to be negligible, and are far more than counterbalanced by their valuable alkaline properties which counteract the acidity of the blood. The medical men seem to have agreed that the Tomato in a raw state is a little difficult of assimilation by those of weak digestions, and such are recommended to have their Tomatoes cooked. The Tomato was eaten in France before we acquired a taste for it, and, indeed, it was chiefly through the wealthy, who passed the spring in the Riviera and there became accustomed to the Tomato, that we in this country first realised the dietetic value of a fruit which, hitherto, had been grown solely for its ornamental value.

Dutch Growers' Visit to England.—A party of fruit growers from Holland arrived in this country on the 1st inst., for a tour of inspection, under the guidance of Mr. B. Geritzen, Horticultural adviser in this country to the Netherlands Government, and Mr. E. C. Boughton, Secretary of the Federation of British Growers. Various centres of the fruit-growing industry in Kent were visited on the 2nd inst., and on the 3rd inst., an inspection was made of East Malling Research Station, where the visitors were entertained to luncheon and tea. On the 4th inst., visits were made to Covent Garden Market, and the fruit plantations of Messrs. Seabrook and Sons, Ltd., at Chelmsford.

Irish Grown Tobacco.—The daily Press reports that the first shipment of Irish Tobacco for over one hundred years has taken place, and that fifteen tons of leaf were shipped from Dublin last Monday for sale in London. This Tobacco leaf was grown in Co. Meath by the Irish Tobacco Growers' Association. Early in the last century nearly all the Tobacco manufactured in this country was grown in Ireland, and during the war of Independence Ireland was our sole source of supply. On the conclusion of peace in 1815, the Government suppressed the Tobacco growing industry in Ireland, and the best workmen emigrated

to the United States. Of late years, steps have been taken to revive the cultivation in Ireland, and it will be interesting to see how the produce of this latest crop compares with Tobacco leaf grown in England—in Hampshire and Norfolk, for example.

The Forthcoming Dahlia Show.—The Hon. Secretary of the National Dahlia Society informs us that, although in some districts Dahlias are late in flowering, the entries already indicate a full show at the Royal Horticultural Society's Hall next Wednesday. Nearly all the large trade growers have been allotted space for non-competitive displays, and entries have already been received from new members as well as from the regular exhibitors, so that the amateur sections should also be well-filled. There will be a formal opening of the show by the Rt. Hon. Lord Lambourne, at one o'clock, and during the afternoon Dahlia blooms will be sold in aid of the Society's funds. The Joint Dahlia Committee of the R.H.S. and the N.D.S. will meet in the morning to judge the novelties, and will make the customary selections for trial at Wisley.

National Chrysanthemum Society's Floral Committee.—The members of the Floral Committee of the National Chrysanthemum Society will commence their duties for the coming season on Monday, September 7. This meeting and also those on October 5 and 19, November 5, 16 and 30, and December 14th, will be held at the Royal Horticultural Hall, Westminster, commencing at 3 p.m., except on November 5, when the Committee will sit at 11 a.m. The meeting on Monday, September 21, will be held in the Music Gallery at Holland Park Hall.

The Canadian Apple Crop.—The Canadian Department of Agriculture estimates that owing to extensive dropping of fruits, the commercial Apple crop in Nova Scotia will be only eighty-nine per cent. of last year's yield, as compared with the July estimate of a crop twenty-five per cent. in excess of last year. In New Brunswick crop prospects have declined to a seventy-five per cent. estimate, while in British Columbia the estimate has declined from ninety per cent. to eighty-five per cent. of the 1924 production. Quebec has an even worse showing, the decline being to sixty-two per cent. of the crop in 1924.

Seaweed an Antidote to Wasp Stings.—A visitor at a seaside town in Sutherlandshire after being badly stung by a wasp applied a small strip of Seaweed to the affected area, and, along with salt water, rubbed the Seaweed well into the skin. The pain was soon alleviated, there was only a slight swelling and no further development ensued. It is suggested that the iodine in the Seaweed was the remedial agent.

Bokhara Clover in New South Wales.—The Bokhara Clover (*Melilotus alba*) appears to be increasing in favour as a farm crop in New South Wales, both for grazing and for hay. Various objections to the growth of this crop seem to have been removed as a result of increased experience, and it is now recognised that in many districts Bokhara Clover has a secondary but equally important value, inasmuch as the deep rooting system of the plant assists the drainage and aeration of the soil, it adds humus at the end of the growing season and increases the fertility of the soil for such succeeding crops as Potatoes and Maize, by means of the fixation of atmospheric nitrogen by the bacteria in the root nodules.

Experiments in the Drying of Apricots.—Some interesting experiments made at Hawkesbury Agricultural College, New South Wales, in connection with the drying of Apricots, show that 168 lbs. of whole fruits dried out to 30 lbs. 8 ozs. after 15 hours in a temperature of 125°; 89 lbs. of whole fruits dried out to 20 lbs. 2 ozs. in 31 hours at 125°; 71 lbs. of fruits dipped in caustic soda (1 lb. to 30 gallons of water), and dried whole, were reduced to 17 lbs. 6 oz. after 25 hours in a temperature of 125°; 42 lbs. of fruits, dipped

in caustic soda solution, then halved (stones weighed 3 lbs.), dried out to 6 lbs. 9 ozs. after 13 hours in a temperature of 125°; and 78 lbs. of fruits, with their stones extracted, but otherwise left whole, dried out to 12 lbs. 15 ozs. after 28 hours in a temperature of 125°.

Mr. John C. Cowan.—The name of Cowan has had a long association with Orchid cultivation, and the early association appears to have been in the Liverpool district, where, at Garstang, Mr. John C. Cowan commenced his business career with his father in 1892. After obtaining considerable experience in the sale and cultivation of Orchids, including a year, 1897-98, spent in Brazil, where he collected *Cattleya labiata*, *C. Warneri*, various *Oncidiums*, and notably the beautiful *C. labiata* *Gilmouriae* and *C. l. Gilmouriae* *alba*, Harefield Hall variety, Mr. Cowan became manager to the firm of Messrs. Hassall and Co., Orchid growers and raisers, of Southgate. On the death of Mr. Hassall and the retirement of Mr. J. Cowan,



MR. JOHN C. COWAN.

senior, Mr. J. C. Cowan entered into partnership with his brother and took over the business of John Cowan and Co., of Liverpool, and Hassall and Co., combining them and making Southgate their sole establishment. Mr. J. C. Cowan is a member of the Royal Horticultural Society's Orchid Committee, and was the introducer of the pretty, yellow *Laelia Cowanii*. At Southgate, Orchids are grown finely, and the raising of new hybrids or fine forms of old hybrids is a part of the business which Mr. J. C. Cowan and his brother, Mr. D. A. Cowan, have developed in an enterprising and eminently successful fashion.

British Aphides.—As there has been no similar book published on the subject since Buckton's *Monograph of British Aphides* (1876-1883), the present volume*, which is the latest number of the "Rothamsted Monographs on Agricultural Science," under the general editorship of Dr. John Russell, D.Sc., F.R.S., will be welcomed by entomologists and others interested in insect life. It is edited by Dr. J. Davidson, of the Rothamsted Experimental Station, and is a reference book of "all the known British species of the super-family Aphidoidea, together with their important synonyms, their distribution and food plants as recorded in Britain." The super-family Aphidoidea contains the Phylloxeridae, which, fortunately, is not very important to British cultivators, the Chermes, which are best known to foresters, and, with its

allied genera, infest various Conifers; and the Aphidoidea which includes the *Aphis* proper. The last named is by far the best known to cultivators in this country, as it includes, amongst others, the too-well-known "green fly" and "black fly." The first portion, and indeed more than one-half, of the book contains a Species List which gives in alphabetical sequence the known specific names, with synonyms, the names of the authors, host-plants, and localities. Then follows a list of eighty-seven genera, with brief critical notes. The nomenclature "follows Baker (1920) to a large extent." A "Food-Plant Index" occupies forty-eight octavo pages. In this the host plants are recorded under their botanical names, Kew being the authority for introduced and for cultivated plants, and Babington's *Manual of British Botany*, tenth edition, for the remainder, with very few exceptions. The genera, with their species, are arranged in alphabetical order, each with its particular "fly." This list is of special interest and value. Its extent will be realised by the reference to the number of pages it fills, and it seems to have been compiled with great care. We have no doubt that in a future edition, this already long list of hosts will be extended, as critical readers will be sure to draw attention to hitherto unrecorded instances. In this respect we note that there is no record of *Chermes Abietis* infesting *Abies amabilis*, a branch of which was received by *The Gardeners' Chronicle* some years ago with dense colonies of the insect. Those with only a general acquaintance with Aphides and their hosts will be interested, and probably no little surprised to learn that amongst a number of other unusual hosts each having their special pest, aphid, or allied pest, are Reeds, Rushes and Grasses, Heath, Nettle, Dock, Privet, Bamboo, and Bindweed. Cultivated plants figure largely in this valuable list, but, as may be seen, our native plants are by no means immune.

Damson Wine.—The *Pharmaceutical Journal* and *Pharmacist* gives the following timely recipe for the making of Damson wine:—Boil 16 lb. sugar and 21 quarts of water for half an hour, removing the scum as it rises, then add 16 quarts of stalked and stoned Damsons, and boil for half an hour, stirring and skimming frequently. Strain and when lukewarm add one gill of yeast and allow to ferment for three or four days. Draw off into a cask, filter the lees, and fill up the cask with them as the fermentation subsides. When this has ended add 1½ pint of Brandy, bung tightly, set aside for six months, then rack it off, filter the lees through a piece of folded flannel, and fill up the cask again, add one oz. of isinglass dissolved in a quart of the wine. Bung securely and leave for two years, then bottle. Another process is:—To each gallon of Damsons add one gallon of boiling water. To each gallon of liquor obtained from these add 4 lb. of sugar and half a pint of brandy. Place the prepared fruit in an earthenware bowl, add the boiling water, and cover with a cloth. Stir frequently during four days. Add the sugar and brandy, and pour into a clean, dry cask. Allow to ferment, then bung tightly, and set the cask aside for twelve months in a moderately warm place. At the end of that time, bottle it. The wine may be used at once, but it improves on keeping.

Sir Herbert Maxwell and the Horticultural Industry.—It is with much pleasure we learn that Sir Herbert Maxwell, of Monreith, has accepted an invitation to propose "The Horticultural Industry" at the dinner of the Horticultural Trades Association to be held in Edinburgh, on Thursday, September 10.

Admission to Kew.—The likely reimposition of the charge for admission to the Royal Botanic Gardens, Kew, which we reported last week, has led to considerable correspondence and comment in the general Press. The consensus of opinion is against any charge for admission to the gardens, the argument being that the making of a charge to enter an establishment maintained at the public expense is indefensible.

* *A List of British Aphides*, by J. Davidson, published by Messrs. Longmans, Green & Co. Price 12s. 6d. net.

and unjust. But greater indignation is directed against the charge of sixpence on the so-called "Students' Days." This is, in various quarters, considered to be an unnecessary restriction, inasmuch as the presence of ordinary visitors on Tuesdays and Fridays could not possibly interfere with anyone's "studies." Much was made by the Select Committee on Estimates, whose figures have been questioned, of their contention that freeing the Gardens on five days weekly has not led to an appreciable increase in the number of visitors to the Gardens. Their critics, while disagreeing with the figures, contend that the retention of the "Students' Day" charge is responsible for keeping away many would-be visitors of the artisan class, who know that there is a sixpenny charge, but cannot remember on which days, and will not risk the possibility of going on one of these days when the cost for themselves and families would be prohibitive. It has been strongly contended that if the finances of the country cannot stand a supposed loss of £5,000 annually on Kew, there should be a uniform daily charge.

Water Diviner's Good Fortune.—Whilst endeavouring to locate an underground spring, a monk of the Convent of Capuchins, at Alexandria, Piedmont, discovered a mineral lode which, on test, yielded a percentage of four grains of gold, and fifty-six grains of silver per ton of soil.

Screening Undesirable Statuary.—Germany seems to have had her sculpture troubles and controversies no less than ourselves, but she seems to have found a happy way out of them, for it is reported that the municipal authorities of Coblenz who forbade the exhibition of the monument to "Deutsche Wein" because some of the figures were considered to be indecent, have allowed it to remain, but have surrounded the statuary group with dense shrubs. Those who wish to gratify their curiosity may do so, but have first to traverse a miniature maze.

Horses or Orchids.—A very curious mistake in a local paper caused a great deal of amusement to many present at the Southport Show. As notified in our report, Messrs. J. and A. McBean obtained the chief award for a group of Orchids, but the local paper described the exhibit as a "group of horses," and as a consequence, Mr. A. McBean was subjected to a great deal of "leg-pulling" in regard to his "new industry."

Children at the Imperial Fruit Show.—The Organising Committee of the Imperial Fruit Show, will allow conducted parties of children from schools to visit the forthcoming exhibition at Holland Park Rink, at a nominal charge of twopence per head. The elementary schools of the London County Council have agreed to co-operate with the Committee in this way, and arrangements are being made to allow parties of pupils to visit the Show on any day between 9 a.m. and 4.30 p.m.

Protection of South African Wild Flowers.—The trade in protected flowers at the Cape seems to be so profitable that offenders against the law pay their fines readily, so that existing legislation is more honoured in the breach than the observance. It is considered by competent observers that the destruction of the past twelve months has been greater than during any similar period. In the hope of more efficiently protecting the beautiful flora of the Cape, the Provincial Council has passed a new ordinance which empowers the police to confiscate all protected flowers that may be unlawfully exposed for sale, as well as apprehend the vendors. More severe penalties will be inflicted, according to the number of convictions, and, in the case of a frequent offender, his wild flower licence will be withdrawn. This new ordinance applies to Crown lands, and does not prevent any owner selling flowers which grow on his land, and protected species cultivated in gardens may still be sold. The onus lies on the seller who will be required to show lawful possession. The Schedule of

Protected Flowers has been revised, as it is found that some kinds, hitherto included, do not need protection.

Appointments for the ensuing week.—Sunday, September 6: Wakefield and North of England Tulip Society's Meeting. Monday, September 7: National Chrysanthemum Society's Floral Committee meeting. Tuesday, September 8: Jersey Gardeners' Society's Meeting; Royal Horticultural Society's Committees meet (two days). Wednesday, September 9: National Dahlia Society's Show; Royal Caledonian Horticultural Society's Show (three days); Sheffield Chrysanthemum Society's Meeting; Bath Gardeners' Society's Meeting; Bothwell

of being allowed to keep the house in an untidy state. As soon as the leaves are all off, the trees should be untrained, and the shoots washed over with a solution of sulphur and soft soap; taking care to perform both this operation and that of removing the leaves without injuring the young fruit or wood buds for next year. The glass should be well washed, and the whole of the woodwork of the sashes and rafters either washed very clean or painted; the latter is, of course, preferable if circumstances permit. The front trellis and the back wall should be painted with oil paint. All this may be done by the ordinary labourers, and is therefore not so expensive as at first might

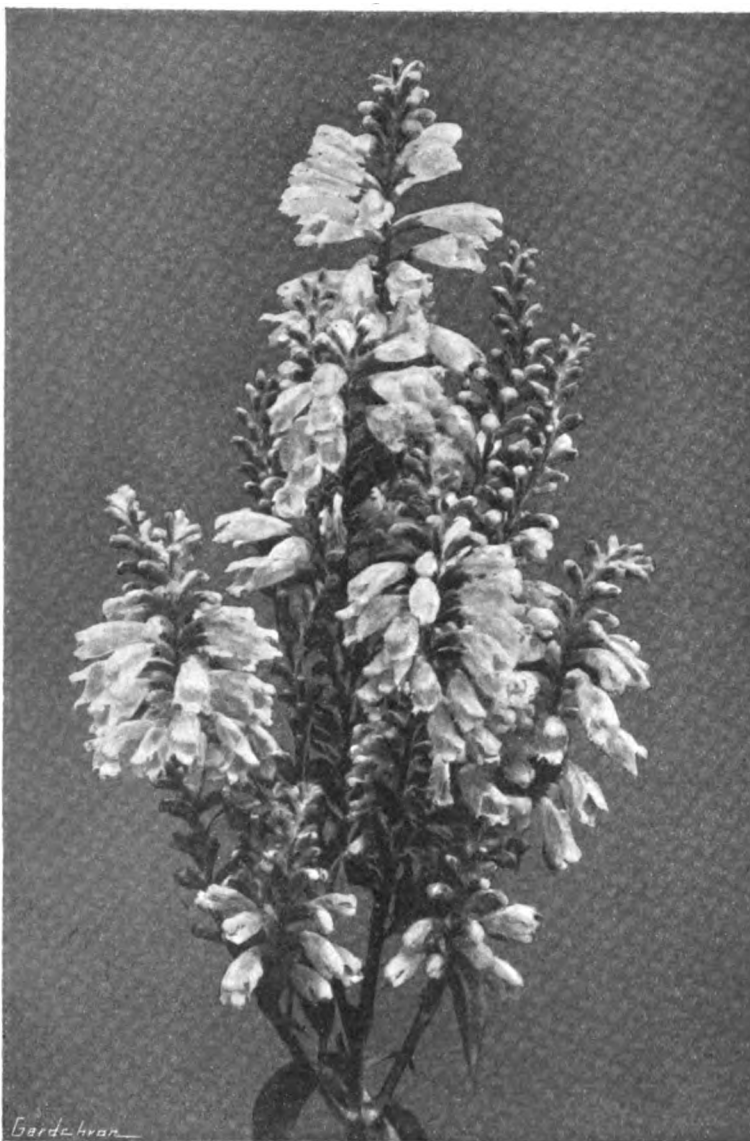


FIG. 69.—PHYTOSTEGIA VIRGINIANA ROSEA LADHAM'S VARIETY.

R.H.S. Award of Merit, August 25. (see p. 176.)

Flower Show. Friday, September 11: Royal Horticultural Society of Ireland Council Meeting. Saturday, September 12: Avonbridge Flower Show; Beith Flower Show; Kilbarchan Flower Show; Brentford Allotment Society's Show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Peach Houses.*—The trees in the early houses having matured their growth, the foliage is gradually falling off, notwithstanding the care that was taken to preserve it as long as possible. To prevent the littery appearance produced by the falling leaves, a birch-broom should be passed gently up the branches every second or third day, to bring down all the leaves which are ready, that they may be removed instead

be thought, while it gives the house a respectable appearance, and effectually smothers every insect, in any stage, which may be lurking about the trees or their supports. As much of the effete soil as the roots will allow should be scraped away from the surface of the border, and replaced with fresh mellow loam, mixed with fine charred refuse, which all plants are fond of. No animal manure should be applied, as the trees can be stimulated to any required extent by using it in a liquid state during the growing season. The concluding operation will be to give the borders a good soaking of clean water, which will keep them sufficiently moist during the dormant season. *Gard. Chron.*, September 8, 1850.

The Week's Work.

THE ORCHID HOUSES

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.,
Gatton Park, Beigate.

Shading.—As the present month advances, many Orchids will be completing their season's growths, and the conditions under which the plants are grown should be such as to cause the pseudo-bulbs to become matured and consolidated so much as possible in order to prepare the plants for the coming winter. We begin now to think of shorter days and less sunshine, and this deficiency in sunlight may, to some extent, be made up by gradually removing the permanent shading. Some shade will still be necessary, but it is impossible to give precise directions, for much depends on the kind of plants contained in the respective divisions. In all cases the reduction should be gradual, the object being to cause the foliage to become hardened so that little shade will be needed after the end of the present month, but the blinds should be used with discretion. The plants should be exposed to all the light possible, without causing damage by scorching.

Damping.—The amount of atmospheric moisture should be regulated with extra care, and reduced in each division. The cooler houses will require damping the least, as there will be less evaporation in these structures. In the warmer houses, sufficient moisture must be promoted to counteract the effect of fire-heat by damping the bare spaces in the mornings and afternoons. Very little fire-heat need be employed in the cool houses, and in these houses the damping of the floors should be done only in the mornings, except on bright days, when rather more atmospheric moisture will be required.

Watering.—The watering of the plants should be regulated according to their various stages of development. Those with pseudo-bulbs near completion should receive diminishing supplies, but water must not be withheld to such an extent as to cause shrivelling. As the nights become colder it will be necessary to provide extra fire-heat.

Ventilating.—On warm days, the ventilators should be opened slightly to prevent scorching, but retain as much sun-heat as possible. The ventilation of the *Odontoglossum* house should be carried out with great care at this season. During warm nights the top ventilators may be opened slightly to admit the autumn dews that are very beneficial to *Odontoglossums*. The inmates of the houses should be carefully cleaned and arranged, so that every plant receives the maximum amount of light.

THE FLOWER GARDEN.

By W. AUTON, Gardener to Viscount ELVEDEN,
Pyrford Court, Woking, Surrey.

Dahlias.—These plants are making a grand display, and will need constant attention to maintain them in full beauty until the end of the season. Some tying, disbudding and thinning of the shoots may still be necessary, and an occasional application of liquid manure will help to maintain the vigour of the plants. It is most important that Dahlias should be examined about twice weekly for the removal of faded flowers.

Eremuri.—These stately plants flourish in a rich, well-drained loam, and although they are best left undisturbed for a number of years, it is advisable to lift and divide the clumps where multiplication of crowns has caused overcrowding. The present is a suitable time for the work, and the operation should be carried out very carefully, as the large, fleshy roots break easily. Spread the roots out to their full length in replanting, and make the soil thoroughly firm about them, leaving the

crowns covered to a depth of several inches. It is wise to choose a position sheltered from the east, for these plants dislike east winds, whilst early sunshine after spring frosts is apt to discolour the foliage.

Nepeta Mussinii.—The soft, lavender shade of the flower and pleasing grey of the foliage, make this an attractive plant. It thrives in dry, sandy soils, and remains in beauty over a very long period. The plant may be easily increased by division in the autumn or spring, but if wanted in quantity, cuttings should be inserted now and rooted in a cold frame.

Bulbs.—Where the planting of small bulbs, such as Crocus, Snowdrop, Winter Aconite, etc., has not been completed, they should be got into position so soon as possible. All bulbs for naturalising should be planted immediately they are obtained, as it is not desirable to keep them in a dry state longer than is necessary, and if kept until roots have developed from the base of the bulb, stored up energy is lost. There are few that can rival the *Narcissus* for naturalising, and it should be planted in quantity in spots where it appears to be naturally at home. Planted in irregular drifts in the open glades of the woodland garden, and in rough grass adjoining shrubberies or fringing drives, Daffodils produce most charming effects.

General Remarks.—The season of overhauling and replanting is rapidly advancing, and careful notes should be made while growth is still at its maximum, of any alterations that it is thought desirable to make, either in herbaceous borders or shrubberies. However good results may have been, there will be some alterations contemplated in most gardens, and it is much easier to make the definite plans now, than to wait until the plants have become dormant.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Gloucestershire.

Liliums.—Plants of *Lilium speciosum*, *L. tigrinum Fortunei*, *L. auratum*, and *L. longiflorum*, which have passed out of flower, call for careful treatment at this stage, if their usefulness as pot-grown bulbs is to be prolonged into another flowering season. In the case of *L. speciosum* where a start has been made with good bulbs, this may be assured for two or more years after the season of importation. After the plants have flowered, gradually lessen the supply of water to their roots, place them in a sunny situation, and so soon as the leaves and stems have naturally shrivelled, turn the bulbs out of their old pots and repot them in fresh compost. If, however, the repotting cannot be performed immediately after the plants have matured, then the pots containing the bulbs should be stored in a perfectly dry, cool place, safe against frost, to ensure their being kept dormant, until they can be potted, as it is essential that the repotting should take place before new root action has commenced. The same conditions of treatment are required by the other Lilies mentioned, though *L. tigrinum Fortunei* deteriorates more rapidly than the first-named; *L. auratum* is less easy to keep through the winter, after being pot-grown, whilst of the *L. longiflorum* section, I have found the *formosum* variety the most satisfactory during late years.

Imported *Lilium longiflorum*.—For earliest flowering next spring, and when gentle forcing may be necessary, it is best to rely on the newly imported bulbs, and with this object in view, bulbs of *L. longiflorum formosum* and *L. Harrisii* should be potted during September. Two-thirds of light, fibrous loam to one-third, of good leaf-mould, some sharp sand and fine charcoal will form a suitable compost. Place one good-sized bulb low down in a six-inch pot, just covering the bulb with the soil, and leaving plenty of space for later top-dressings, this being a stem-rooting variety. Start the newly-potted bulbs of this Lily in a cold frame on a firm ash bottom, covering them slightly with some granulated peat moss.

***Lilium candidum*.**—Bulbs of the Madonna Lily imported from Holland are the most reliable for growing under glass for early flowering, indeed, it is seldom that success is achieved in this direction by the lifting of home-grown bulbs. These, also, should be potted this month. A compost consisting of three-parts fibrous loam to one of well-decomposed hot-bed manure, some crushed old mortar rubble, charcoal and sand, will be suitable. Place five or six bulbs in an eight inch pot or pan, just covering them with the soil, leaving sufficient room in the pots for watering only, since this is not a stem-rooting variety. Afford this Lily the coolest possible treatment always.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Winter Tomatoes.—With the recent unsettled state of the weather, Tomatoes in pots that are being prepared for winter fruiting should now be brought indoors. Wherever possible, thoroughly wash and cleanse the house, lime-washing the walls, etc. Give the house full ventilation whenever the outside conditions permit. Water the plants carefully at all times, keeping the floors dry. Fumigate the house about every fourteen days; this will keep insect pests in check. Pick the fruits so soon as they commence to colour, and ripen them in the store room.

Loam and Soils.—Wherever new borders are to be made, it will be advisable to have plenty of the best loam obtainable cut and stored for use. For Vine borders I use a layer of cow manure without much straw, between each layer of turves, that are placed grass side downwards, and several good dressings of fresh soot. For Peach and Nectarine borders leave out the manure as it tends to cause rank growth in the trees. A large, open shed admits of mixing the compost in wet weather, and keeps the soil in a much better condition than it would be in the open. Also place under cover a goodly supply of burnt earth, dry wood-ash, mortar rubble, and material for drainage. Have everything in readiness for the busy season which is rapidly approaching.

Ripe Grapes.—Examine the bunches at least once a week to see that the berries are keeping well. Examine the borders carefully for water as they sometimes dry out very quickly, especially when well-drained and full of roots. Water the border early in the morning of a fine day, and cover the border afterwards with dry, clean straw. Where Grapes are required for the autumn exhibitions, it is a good plan to place clean, dry mats over the straw to keep down the atmospheric moisture. Attend to the growths, keeping them pinched back. See also that spiders are not spinning their webs over the bunches. This is often a great nuisance in a vinery. Maintain a warm, buoyant atmosphere at all times.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Raspberries.—So soon as the fruits have been gathered, cut away all the old fruiting canes to allow extra space for next year's fruiting canes. The latter should be tied to the wires or stakes but not so tightly as to cut the tender bark. A distance of eight or nine inches apart will suffice. When this work is completed, all other young canes, weeds, and rubbish should be cleared away and taken to the fire and burnt. The rows should be lightly forked over to make the soil tidy and to allow the sun and air to enter and warm the ground. Pyne's Royal, in these gardens, has fruited on the young growths almost perpetually, and given very fine berries. Lloyd George has grown very strongly and given a large quantity of fruits on the tips of the canes. Neither of these varieties has been cut back. Varieties that were cut back in the spring or planted last

April for autumn fruiting will now be showing their fruit, and the canes should be supported before the berries advance too far in ripening.

Loganberry.—The old branches of Loganberries that have fruited should be cut away, and young growths required for fruiting next year trained in their places, not too thickly but in sufficient number to cover the space allotted to the plants. Being strong in growth a fence is most suited to training the Loganberries to.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Endive.—Plants of the first sowing have made good growth by now, and steps should be taken

are sufficiently thinned to allow the roots to swell large enough to make good specimens for use during the winter. These young roots of late-sown Carrots are greatly appreciated in the kitchen.

Peas.—Examine the rows of any special variety of Pea that is being saved for seed. When fit to pick, the pods should be collected on a dry day and put on a staging in a sunny spot in a cool greenhouse to become thoroughly ripened before shelling them on the first day labour can be spared when the weather stops out-door work. Home selections of good pods of varieties often produce better results than bought seed.

Hoeing.—Weeds are growing apace, therefore the hoe should be used on every available occasion. Get as many weeds as possible killed while the sun has power left to dry them up.

perfectly level, after which cover the surface with a slight coating of finer sand which will assist in preventing the growth of fungi and leaf-damping of the cuttings during winter. Many of our finer-named varieties have flowered most freely, this year, but at the moment show small signs of producing sufficient cuttings. This may be overcome by half cutting back the plants in mid-September and lifting sufficient numbers for stock purposes. These, planted thickly in seed boxes and placed in cold frames will, when introduced to slight heat in early spring, develop young shoots, and these will root readily if taken off, preferably with a heel, and inserted as cuttings round the edges of pots or in boxes. In cold districts, where old favourite varieties of Pentstemons such as Newbury Gem will not winter outside, these may also be lifted and heeled into a cold frame, half cutting back the



Photo by Kay and Foley.

FIG. 70.—THE MAGNIFICENT COLLECTION OF VEGETABLES EXHIBITED AT SOUTHPORT SHOW BY THE HON. VICARY GIBBS (GR. MR. E. BECKETT), ALDENHAM HOUSE, ELSTREE (see p. 198).

to bleach the more forward specimens, to have them ready for use soon, as salad. There are several methods adopted for bleaching the plants. One of the commonest is to tie the leaves together, not too tightly, on a dry day, and place inverted pots of a suitable size over them. Such plants should be examined occasionally during dull periods for signs of damp, and affected leaves must be cut away. If a Mushroom house is available, a few plants may be lifted as required, placed therein in boxes or pots, and in a few days they will be ready for use.

Carrots.—Crops of early-sown Carrots will be better out of the ground now, for loss might result from a number of split roots. The best place in which to store Carrots is in the coolest shed available and they should be stored in sand. If possible, get the crop out of the ground when the soil is on the dry side and on a fine day. See that the plots of July-sown Carrots

In showery weather, the weeds should be cleared off and tipped on the rubbish heap ready for rotting, to form a heap on which next year's Vegetable Marrow bed may be formed.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Pentstemons.—Cuttings of all varieties of Pentstemons should now be secured for next year's stock of plants. A cold frame is the best place in which to root the cuttings, and they require a liberal depth of rooting medium if good plants are to be lifted from the bed next spring. Fresh soil should be used in the frames each autumn, and add to it, when preparing the bed, fair quantities of riddled leaf-mould and coarse river sand. The whole should be well mixed with a fork, made slightly firm and

plants when lifting them. Treated in this way, and replanted, Newbury Gem gives a better display and flowers over a longer period during the second year than in the case of plants obtained from autumn cuttings.

Endive.—Where Endive is required soon blanching may be effected where the plants have grown to a sufficient size by placing over the selected plants pots of a suitable size to cover them. Slugs must be guarded against after covering the plants, and, as a preventive, soot and lime may be sprinkled freely around the pot.

Weeds.—Owing to the very damp weather, weeds are getting out of hand, especially on ground recently relieved of a crop, in alleys, under walls, etc. At this season they are not readily killed after hoeing, but are best raked into heaps and covered with soil, burying them later when digging the ground.

TREES AND SHRUBS.

GAULTHERIA TRICHOPHYLLA.

THOUGH often slow to establish itself, this little Himalayan species is one of the easiest and best of its somewhat fastidious and interesting race. No more than about four inches high, it creeps about by means of underground shoots, covering the ground with its slender growths, which are amply furnished with small, narrow-oblong, dark glossy-green leaves, the margins of which are slightly hairy. The pink flowers are comparatively insignificant, but these are followed by fruits of a vivid china blue, and as they are as large as sparrows' eggs, they seem quite out of proportion to the size of the plant.

G. trichophylla enjoys a firm, cool bed of leaf-mould, and light, lime-free loam, preferably containing some sunken porous rocks or sand stone. It will also succeed in sandy peat. The main desideratum appears to be an even supply of natural moisture at all times, and it likes a rock-shaded bed which only gets the late afternoon and evening sun. It will grow in woodland and not resent tree-drip, but the plant always appears to be sturdier in more open and exposed conditions, and there is no doubt that it appreciates a humid atmosphere, such as a mountainous district would afford.

Once established, *G. trichophylla* will need no attention beyond an occasional spring top-dressing of fine leaf-mould and sand. Propagation may be effected by cuttings, but division is a more expeditious and certain method. *A. T. J.*

INTERESTING TREES AND SHRUBS AT KEW.

THE hot weather of June and early July was favourable to the growth of the hybrid *Ceanothuses*. For two months, a dozen beds at Kew Gardens, each planted with one variety, have been flowering freely. Considerable numbers of named varieties are in commerce, which are mostly of continental origin. Among these, however, are several which may be described as too-much-alike varieties. A selection of eight or perhaps ten of the best sorts would comprise a representative collection.

The variety *Gloire de Versailles*, with large clusters of blue flowers, is too well known to need praise from me. *Arnoldii* produces an abundance of pale blue flowers; *grandiflorus* is also pale blue, the clusters of flowers are smaller, but very freely produced; *Topaz* is a deep, rich blue, while *Indigo*, as the name suggests, is darker still.

The best of the pink shades is *Perle Rose*, with delightful clusters of rich pink blossoms; *Marie Simon* and *americanus opacus* are very similar if not identical, the bushes are more compact in growth than some, the flowers a lilac-pink; *Georges Simon* is, perhaps, best described as a puce-pink, while the flowers of *Ceres* are of a lilac-pink shade.

In the shrubby *Compositae* collection at Kew, and on a wall, *Olearia albida* is flowering very freely. The leaves are silvery beneath, green above; the flower heads are borne in several flattish clusters at the ends of the shoots.

Whether this species will prove equally as hardy as the popular New Zealand Daisy Bush, *Olearia Haastii*, remains to be proved.

If one may judge by the number of specimens of *Hibiscus syriacus* received at Kew for naming, the bushes of this Oriental shrub are flowering freely in various parts of the country this autumn. This is another example of a shrub from a sunnier clime delighting in the hot weather of June and July. The Kew collection contains a representative selection of both the double and single varieties.

As showy decorative bushes, the single varieties are superior to those with double flowers. Especially prominent among those with double blossoms are: *Snowdrift*, pure white; *Coeleste*, almost a sky-blue, but a little purplish; *Hamabo*, bluish with large crimson blotch, and *Rubis*, ruby-red.

Hydrangea paniculata and the variety *grandiflora* are the most ornamental and showy

of the strictly hardy kinds of *Hydrangea*. During August, the large heads of the sterile white flowers of the variety *grandiflora* are showy. Towards the end of the month and during most of September, the species is very attractive. A large round bed on the sloping ground in front of the Japanese Gateway is worthy of note at the present time. Usually seen as a deciduous bush it attains with age the dimensions of a small tree.

Koelreuteria paniculata is flowering freely; the handsome, pinnate leaves and terminal pyramidal panicles of rich yellow blossoms are distinctly ornamental. It is a tall, deciduous shrub, or tree up to forty feet or more in height. Another hardy species, also from China, *K. apiculata*, introduced by Mr. E. H. Wilson, is distinguished by its more divided leaflets.

Oxydendrum arboreum, the Sorrel Wood, or Sourwood, of North America, is a small tree belonging to the *Ericaceae*, flowering during August and early September. Before the leaves fall in autumn they gradually assume gorgeous tints of crimson, red, orange, and gold.

Nyssa sylvatica is one of the first trees to herald the approach of autumn, and the leaves are already turning a rich, dark red. *A. O.*

TENANCY LAW.

THERE appears to be a certain amount of controversy between the landlord and the tenant as to their respective rights to fruit trees and bushes, and the tenant's right to claim these on the expiration of his tenancy. The legal positions of the landlord and tenant can be found in the Agricultural Holdings Act of 1923, but as this Act is very long and involved a short summary and explanation of the sections dealing with this subject, should prove useful to the tenant gardener.

Where the land on which the tenant wishes to plant his trees or bushes, etc., is an ordinary holding, i.e., one which is not used solely for gardening purposes, it is necessary for him to notify the landlord of what he intends to do, and obtain his consent before he plants any trees. If the tenant fails to do this, he will not be allowed to claim compensation for the improvements on the expiration of his tenancy, nor will he be allowed to take away the trees or bushes he has planted, although he may have paid all the expenses for their purchase and planting. Thus it will be seen that the planting of fruit trees, etc., is a matter for mutual agreement between the landlord and the tenant, introducing what clauses they think suitable in connection with the ownership of the trees, on the expiration of the tenancy. I believe that as a matter of fact, in some parts of the country, so far as agricultural land is concerned, it is usual for the landlord to pay for the new trees, and the tenant to plant and look after them, and where this is done, much unnecessary trouble can be avoided.

MARKET GARDENS.

Where, however, the land concerned is a market garden, as defined by the Act of 1923, the law is very different from that which governs an ordinary holding. A market garden is defined by the Act as "A holding cultivated wholly or mainly for the purpose of the trade or business of market gardening." Unfortunately, there is no definition of the term "Market Gardening," but the words "trade or business" would exclude all gardening which is carried on merely as a pastime, and not for profit. The special privileges given to the tenant of a market garden, as regards the planting of fruit trees and bushes, etc., can be divided into four sections.

In the first place, on leaving his holding the tenant may claim compensation from his landlord in respect of the following improvements, whether he has notified or obtained the consent of the landlord or not:—

- (1) Planting of fruit trees and bushes permanently set out,
- (2) Planting of Strawberry plants,
- (3) Planting of Asparagus, Rhubarb and other vegetables which are productive for two years or more.

Secondly, the tenant may claim compensation for any improvements he has bought, even though he did not obtain the landlord's consent to their purchase.

The tenant is also entitled to take away any fruit trees and bushes which have been planted by him, and are not permanently set out; if, however, he does not do so before the determination of the tenancy, they become the property of the landlord, and the tenant can claim no compensation in respect of them.

The fourth privilege of the tenant of a market garden is that he can remove any buildings he has erected on the land at his own cost, or those which he has bought since December 1, 1900.

Although these privileges are only enjoyed by the tenants of market gardens, the tenants of other land can obtain those which affect them by means of a special agreement between themselves and their landlords. *Harold A. Sharman.*

SUMMER BEDDING IN GLASGOW BOTANIC GARDENS.

THE summer bedding is one of the chief attractions in the Glasgow Botanic Gardens at the present time, and the flower beds have been at their best during the past few weeks.

The main group of beds is on a triangular plot of grass, a few yards in from the main entrance to the gardens. The group is made up of eighteen beds as follow:—In each of the three corners is a triangular bed planted with *Pelargonium Artemus* Ward, having as an edging a double line of *Lobelia Waverley* Blue, with specimens of *Scrophularia nodosa* var. *variegata* as dot plants.

Immediately behind each of these three beds is a bow-shaped bed planted with *Dahlia Coltness* Gem and edged with *Pyrethrum laciniatum*. The large, circular bed in the centre is filled entirely with *Dahlia Delice*, and this also has a double line of *Pyrethrum laciniatum* as an edging.

The sides of the triangle are made up of round and oblong beds. Three of these small round beds are planted with rich golden-coloured *Calceolarias*, *Lobelia Royal Purple* providing an edging. Three of the round beds are furnished with white *Antirrhinums* associated with dot plants of *Lobelia cardinalis*, and having an edging of *Lobelia* St. Martin. A round bed of a Primrose-coloured *Antirrhinum* edged with *Lobelia Waverley* Blue is particularly effective.

There are four oblong beds each planted with *Stocks* as a groundwork, there being two beds of mixed *Stocks* and one each of pink and purple varieties.

Interplanted with the *Stocks* are rows of *Fuchsia* Mrs. Marshall, and the annual white *Alyssum* is used in each of these four beds as an edging.

Directly beyond this group of beds the main road through the Gardens bears sharply to the left, and on the right is the Front Range, about one hundred yards in length, and on the left a straight terrace of flower beds.

The beds, fourteen in number, are either round or oblong in shape, and the plants blooming in them are: white *Antirrhinums*, annual *Asters*, a *Calceolaria* with golden yellow flowers (possibly a form of *C. amplexicaulis*), flaked *Carnations*, single yellow *Dahlias*, scarlet *Pelargoniums*, *Stocks* in variety, *Pentstemons* in variety, and *Phlox Drummondii*.

The following plants are used as edgings to these terrace beds: annual white *Alyssum*, *Ageratum* Sutton's compacta, *Geranium* Mrs. McGrath, *Lobelia* Royal Purple and *Waverley* Blue, and *Pyrethrum*. Though forming a perfectly straight line, the beds are broken here and there with *Hollies*, thus obviating formality.

For a period of three months an isolated circular bed of *Nemesia strumosa* made a blaze of colour, and now, as the *Nemesias* are going over, *Gladiolus Brenchleyensis* is supplying vivid colouring. *W. Howell.*

ALPINE GARDEN.

GENISTA SAGITTALIS.

THE Arrow-jointed Broom will succeed in any ordinarily good soil, and is quite at home in a dry, exposed position in the rock garden.

The flowers are disposed in an ovate, terminal and leafless spike; they are bright yellow in colour and produced continuously throughout the summer. The leaves are lanceolate; the stems are prostrate, the branches herbaceous, ascending and two-edged. The plant grows about six inches high.

G. sagittalis was introduced from South Europe in 1750, and is undoubtedly an extremely useful rock shrub. It may be propagated from seeds or by layering, the latter being the usual method and the one to be preferred. *Ralph E. Arnold.*

most disastrous spring frosts I remember. It needs a dry soil and a sunny situation. It may be planted now or in the spring.

SEDUM KAMTSCHATICUM.

THE Kamtschatkan Stonecrop is a most useful plant in the garden, and is specially valuable for covering stones on the margins of the herbaceous borders or for planting in the rock garden, where it will hang slightly over the stones without being too aggressive. It has been called the orange *S. spurium*, but it differs considerably, and has never been with me so rapid a grower as the latter; it has always seemed to me a more refined subject.

It is a trailing plant with thick, succulent leaves and produces an abundance of orange-coloured flowers in autumn. There is a pleas-

AN ORANGE-COLOURED BORDER.

ONE of the most effective orange-coloured borders may be obtained by planting *Kniphofia aloides grandiflora*, a tall-growing, Red-hot Poker flowering during August, as a background to such varieties of *Montbretias* as *George Davidson*, *Star of the East*, or, indeed, any of the orange-coloured varieties, with *Geum Borisii* × *Mrs. Bradshaw* as a front line, the flowers of which are a vivid orange-scarlet. During August, these plants are in full bloom and the display of colour they provide is conspicuous from a distance. *Logan.*

OXALIS FLORIBUNDA ALBA.

THE plant sold under the above name and which is, presumably, a white form of the beautiful *O. rosea*, has, apart from its colour,



(Photo by Kay and Foley.)

FIG. 71.—THE PREMIER ROCK GARDEN AT SOUTHPORT SHOW, EXHIBITED BY MESSRS. T. B. HAYES AND SON, KESWICK.

(see p. 106).

STACHYS CORSICA.

FOR lengthened bloom and neatness there are few alpine plants which are superior to the little Corsican Hedge Nettle, *Stachys corsica*. It is a lovely little plant and one which has earned for itself the highest praise from one of our keenest and most widely experienced alpinists, and it is impossible to claim that he has too highly flattered this miniature plant. It spreads into a small carpet of emerald leaves, which for months are covered with flowers, not large, but big in comparison with the plant. They are a pretty white on opening, but soon become tinged with a warm blush shade. It can hardly be said to rise above the ground, so closely does it creep along it, and the amazingly pretty little flowers barely rise above the leaves. The writer referred to above states that "fairies might give a dance there among the untellable multitudes of those flowers."

The plant is hardy, although I must admit that I once nearly lost it during one of the

ing variety called *S. kamtschaticum variegatum*, which is attractive all the summer and has the same orange-coloured flowers as the type.

S. kamtschaticum may be planted at almost any time, but early autumn and spring are the most preferable seasons. Seedlings may be raised in pots under glass, whilst cuttings of this *Sedum* are as easily rooted as those of any Stonecrop. *S. Arnott.*

HARDY FLOWER BORDER.

KNIPHOFIA ALOIDES.

ON the sloping bank, between the Sion Vista and the lake at Kew, three large beds of Torch Lilies, *Kniphofia aloides*, are brilliant with Red Hot Pokers, one bed reflecting most effectively in the water from the opposite side when the sun shines. *O.*

some very distinctive characteristics. With us at any rate, it is chiefly remarkable for the extraordinary length of its blooming period. Indeed, it may be said to be never out of bloom the year round.

Whilst the typical plant flowers in spring and early summer, soon afterwards dying down completely; the white variety begins even earlier and continues to produce a succession of flowers until late in the autumn. It is not entirely herbaceous with us, as the type is, and is it altogether a more easily satisfied plant, growing well in any soil and in sun or shade. Though smaller in all its parts than the best forms of *O. rosea*, the albino is well worthy of a good place in recognition of its perennial cheerfulness.

Oxalis rosea is the correct name of the plant known in gardens as *O. floribunda*, and it was introduced from Chili in 1823. It is figured in *Bot. Mag.*, tab. 2415 and tab. 2830 under the name of *O. floribunda*. *A. T. J.*

BULB GARDEN.

ARUM DRACUNCULUS.

THE foliage of this plant has now collapsed—the flower spathes having already gone some two or three weeks earlier. In each case the decay is somewhat sooner than usual, due, of course, to the hot, dry spell.

There is a certain degree of beauty about this Arum, but this is greatly marred by the almost offensive smell emitted by the plant. And for the latter reason it cannot be given a place in the flower border, the odour being too objectionable.

A suitable spot for it is the front of a shrubbery or grouped in an opening in the woodland. The growth of this tuberous plant reaches

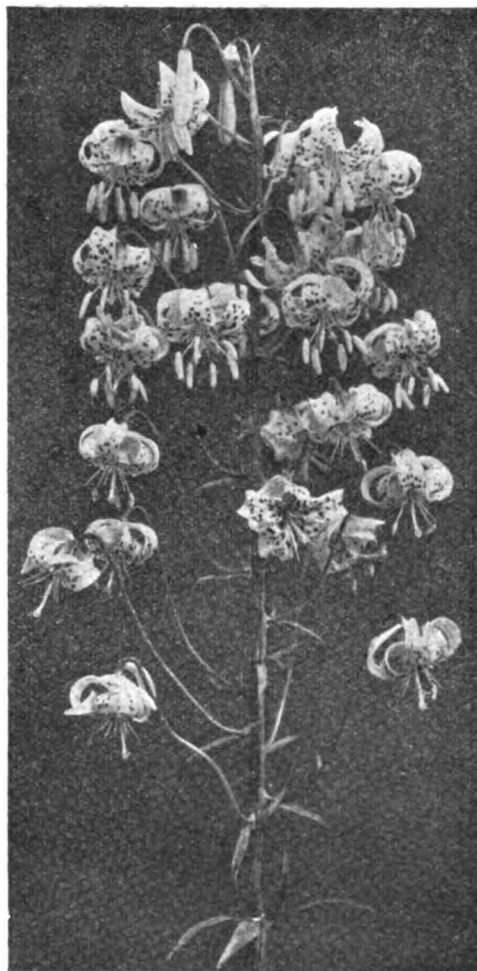


FIG. 72.—*LILIUM ROEZLII*.
(see p. 100).

two and-a-half feet. The black mottlings on the flesh coloured stems have gained it the name of Snake Plant. The large flower spathes are a purplish-black in colour. The plant is quite hardy. *C. Turner.*

ANEMONE SEEMANNII.

ANEMONE Seemannii is a very pleasing little Windflower of hybrid origin, and, like *A. ranunculoides*, suitable for associating with the Wood Anemone, *A. nemorosa*, although it is as yet too scarce for planting in quantity. It was raised by crossing *A. nemorosa* and the yellow-flowered *A. ranunculoides*, and the hybrid may be classed as intermediate between these two species; it has also been called *A. intermedia*, but the latter name has previously been bestowed upon another hybrid Windflower.

A. Seemannii is rather taller and has slightly larger flowers and foliage (the latter a bronzy-

green) than *A. ranunculoides*. The flowers are paler in their yellow colouring than those of *A. ranunculoides*, and may be described as a very warm creamy-yellow.

This Windflower is in commerce, and may be purchased and planted when other bulbous plants come to hand, at a depth of about two inches, in light soil, and it is a recommendation to many that it will flower well under the shade of deciduous trees. It blooms about May. *S. Arnott.*

CYPELLA HERBERTII.

THIS elegant Argentine species is a member of the Iris family, and though well-known to

of *Iris sibirica* in size and general appearance, but the "falls" are a soft, wedgwood blue, with central markings of brown and yellow.

These Cypellas set seeds in abundance, but I cannot claim to have had any success in raising plants by that means. *J.*

BULBS TO TRY.

It must be nearly twenty years since Mr. William Marshall, who was for so long Chairman of the Floral Committee of the R.H.S., told me one evening in the old Club Room of the

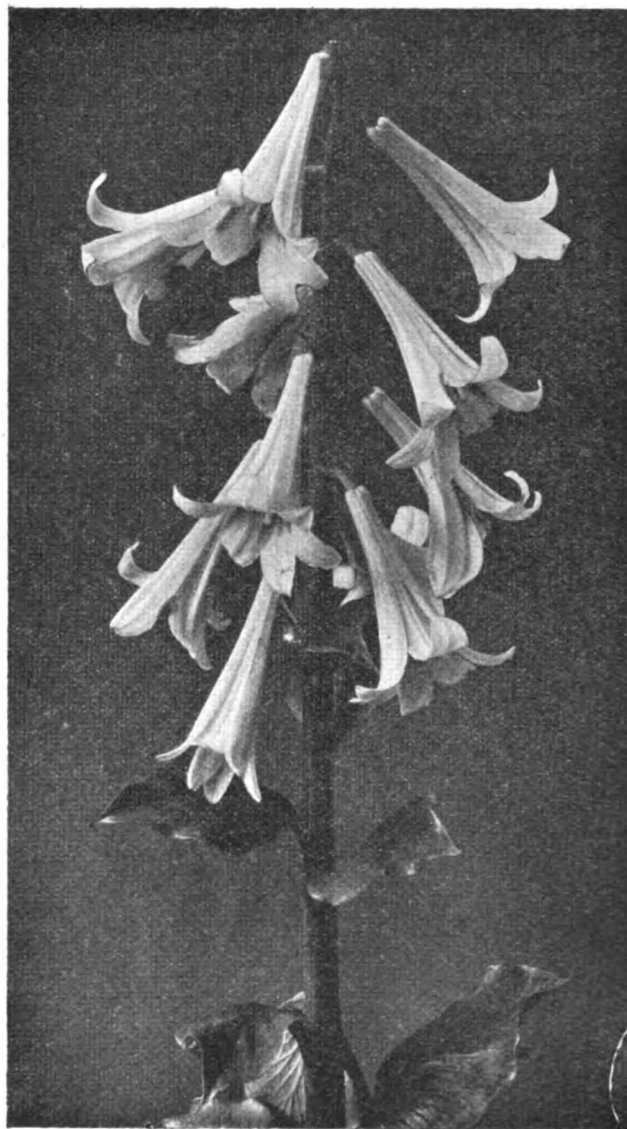


FIG. 73.—*LILIUM GIGANTEUM*.
(see p. 100).

us as an indoor plant, it is not often met with in the open. It is, however, quite hardy in any light, well-drained soil in a sunny position, and under such conditions a group of plants will yield a succession of the dainty coppery-buff flowers from June to September. The blooms are borne on stems two feet tall, which stand upright without support, but, being almost leafless, the plants may be put, like *Ixias*, among a carpeting of other border plants.

The latter will often serve to protect the bulbs from frost, though they may be lifted and stored if desired.

Nothing looks more charming with *C. Herbertii* than a group of another species, *C. platensis* (syn. *Polia platensis*), which has broader, sword-like leaves, and flowers not unlike those

Horticultural Club that he did not know Prince of Austria Tulip. A man of his vast experience not to know what I imagined was one of the best known of all Tulips!! It seemed to me like a present-day cricketer never having heard of Hobbs. It made a great impression upon me. Had it been Tulip Trip to Stockport or Sulphur, I would not have been surprised, but Prince of Austria!! Perhaps, then, the compiling of this little list is not altogether a "carrying coals to Newcastle."

HYACINTHUS AMETHYSTINUS. — I introduced this dainty plant to a friend last autumn. "Try a few," I said. He now wants to know where he can buy a few hundreds. "I want to make a 'drift' of them in some very thin woodland." I think they will be all right

there; but I have no first hand knowledge of them in such positions. In a bed in the open they are exquisite, especially towards evening, when the light comes through the small, soft Cambridge-blue bells delightfully hung around the thin, stiff, foot-high stalks, on a calm evening in early June. It is only a small matter, some will say, but one must sit and look at them, rather than stand and look at them, to get them at their very best.

MUSCARI ELEGANS.—I think if I were in the running for becoming a famous man I would rather not have a famous father or a famous brother. They more or less fulfil the function of a smoke screen. So with *Muscari elegans*. With Heavenly Blue in possession, it will have to fight for its place in gardens, but if a Grape Hyacinth of a deeper blue than Heavenly Blue is wanted, *elegans* is the very thing. It is exceptionally free-flowering. If only it had the strong, spicy scent of its better-known congener! Mr. John Hoog, of van Tubergen's, tells me that it was introduced into commerce by Max Leichtlin, and that it is very likely that it originated as a seedling in his nursery.

NARCISSUS EARLY PERFECTION.—This will be a novelty to very many. I can only state that I have such confidence in this variety as an early flowering Poetaz under glass that I have begged one of the great Guernsey growers of flowers for market to give it a trial in 1926, and he has bought bulbs to this end. I would not have ventured to do this had I not tested it myself, and had I not seen it and heard about it at the opening of the big Heemstede Show in early March this year. It was past its best. From a practical point of view it was none the worse for that. The representative of the firm which holds the main stock told me they had had the utmost difficulty in keeping it even in the condition in which I saw it. I am sure they had. Early Perfection has a white perianth and has flowers after the Alsace or Elvira type.

SPANISH IRIS THUNDERBOLT.—I have never tested the increase of this wonderful variety, nor do I know the date when it first appeared in catalogues, hence I am uncertain why it is always the most expensive variety among Spanish Irises. Anyhow, it cannot be too widely known, and whoever has light soil in his garden may invest in a few bulbs with every prospect of success. The cost is not ruinous. In the catalogues I have consulted the price varies between fifteen pence and two shillings a dozen, less of course by the hundred. The standards are wide and a rich shade of purple, while the falls are a golden-bronze with conspicuous blotches of yellow. I call it the Louis XIV of its race, as its colour scheme is reminiscent of that famous Tulip. The bronze group of Spanish Irises includes Hercules, Prince Henry, and Reconnaissance, as well as Thunderbolt.

TULIP DE WET.—The orange-red Tulip Prince of Austria has laid us under a great obligation in having given us as a sport the brilliant orange De Wet, or as some lists have it, General De Wet. All the good qualities of the parent, both as a plant for pots and a plant for the garden, are continued in the offspring, and in addition, what may be a recommendation for some, its flowers are rather larger. When they are looked at at close quarters, it is seen that the brightness of the orange is caused by the deep yellow or orange ground being covered with a fine network of red-coloured veins.

CROCUS QUEEN OF THE BLUES.—This is one of the choicest of all Dutch Crocuses. It has only been in commerce two or three years, but it will not be long before it will be widely known. Queen of the Blues has large blooms of a pretty shade of lavender or Ageratum blue, not unlike the ever popular Maximilian; it is about the first of the Dutch Crocuses to come into flower; is very free; and as a send-off, received an Award of Merit in London in 1924. My little patch was badly buffeted by wind and rain this last spring, but its corms were so well stored with blooms wherewith the

devastation was repaired that one was able to see it in almost its full beauty before the rain once more descended and the winds blew.

TULIPA PERSICA.—This is a very old garden flower. Many must know the little low-growing plants with their bright orange-yellow, starry flowers, even if they do not grow them themselves, but would anyone imagine they would make charming subjects for pots if grown in a cool house? Twice this year I saw

this old species although it is only two feet high and has not the important look of others of higher stature. It is a real deep blue. It is an uncommon plant in gardens. Only a few who come to me know it. Others ask, "What's that?" "Ah," I answer, "that's a plant you might be very glad to have a good patch of, if there were no such things as Potatoes. Douglas, the famous and unfortunate North American traveller, had many a good meal of them when hard pressed for food. The Indians

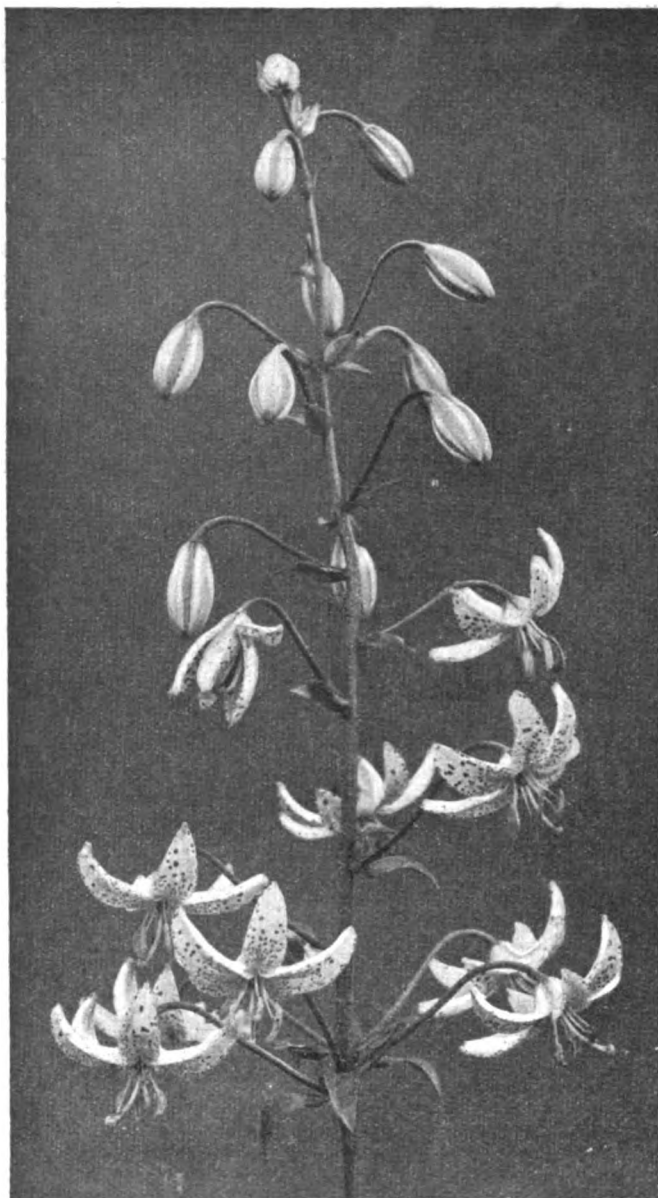


FIG. 74.—LILIUM SUTTON COURT.

A hybrid between *L. Martagon album* and *L. Hansonii*.

(see p. 190.)

them grown in this way, and right well they looked.

BREEDER TULIP LUCIFER.—Every dog has his day, and plants have years. It was Lucifer's turn this year in my garden—never before has it been so beautiful. It put both Afterglow and Vulcan in the shade. The long, coppery-orange flowers lasted so long and looked so handsome, both at hand and at a distance, that it is now firmly established as one of my special favourites.

CAMASSIA ESCULENTA.—I am very fond of

there in olden days used to store the bulbs as a winter stand-by. The young women of the tribe were very much to the front in their collecting expeditions for the one who secured the biggest "bag" was fairly certain to secure a husband.

TULIP BLEU AIMABLE.—Of all the varieties of Tulips in Mr. Jan Ross's big glasshouse at Heemstede, when I visited it this spring, not one appealed to me as did my own out-of-doors friend, Bleu Aimable. *Joseph Jacob*.

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NOTES ON LILIES.

TWENTY years ago, in a letter to the writer, Mr. Carl Purdy, who has an intimate first-hand knowledge of the ways of Pacific Coast Lilies, expressed the view that at its best, *Lilium Roezlii* was not surpassed in "graceful loveliness" by any other Lily. That was high praise in those comparatively remote days, and though since then new Lilies have sprung up and much more is known of the genus generally, there are probably few judges who would be inclined to deny that Mr. Purdy's judgment still holds good.

But for the elegant beauty of this Lily to be appreciated, it must be seen at its best, and the photograph (Fig. 72) does not do the plant full justice. It has the defect of so many non-stereoscopic pictures in that it makes the head look too heavy and too flat. Nor does it show the characteristic linear leaves crowded as thickly on the stem as those of *L. regale*. When *L. Roezlii* reaches the stage shown in the figure, the bulb has usually signed its own death warrant; in other words it has reached its optimum and dies, just as the bulb of *L. Parryi* dies after so great an effort. A stem carrying twelve blooms is a good average for *L. Roezlii*, and a well-balanced head of about that number creates much the same impression on the retina, as, for instance, a well-flowered branch of *Zenobia pulverulenta*. *L. Roezlii* is naturally a plant of peaty places and moist, alluvial bottoms in the Siskiyou mountains, at comparatively low elevations. In cultivation it comes between *L. pardalinum* and *L. Parryi*, being neither so easy to handle as the first nor so capricious as the latter. It may be propagated readily and rapidly from seed, or bulb scales, and once assured of a stock of bulbs in reserve, the resourceful amateur will soon find the key to cultural success. In the writer's experience this Lily is not averse from lime in moderation, though the finest growths seem to be in lime-free places. There is no doubt, however, that unless its feet are wet it fails in drought. This much was evident in 1911 and 1921

and was again noticeable a few weeks ago before the recent rains. The bulb is hardy.

Anyone who is so minded may grow *L. giganteum* (Fig. 73) if they will remember that a deep, rich soil is as essential as a cool one. In the matter of richness no one need go to such lengths as the Lily-growing maniac of the story, who before his crime was discovered had murdered two of his friends and placed the corpse of each under a bed of *L. giganteum*, with astonishing results in the way of growth; but it seems almost impossible to make the ground too rich. The writer has often suggested that there can be no happier memorial to an old equine or canine friend than to plant *L. giganteum* over its remains, and Sir Herbert Maxwell has been heard to observe that the carcass of a pike has a stimulating effect on this Lily. Bullock's blood

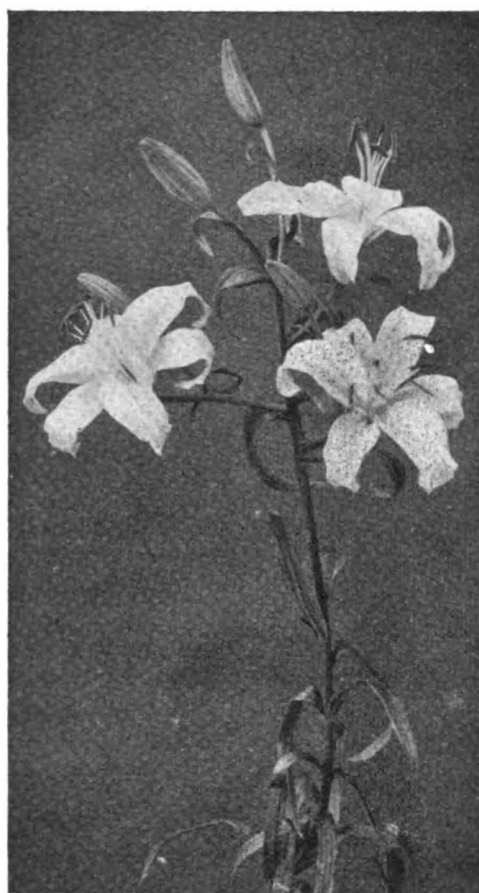


FIG. 75.—LILIAM BATEMANNAE.

too, is often recommended, though the notion that it enriches the haematic colouring of the flower is far-fetched.

Another point to be remembered is that while the plants may be left to themselves in such dripping summers as those of the last three years they need helping through a long drought. *L. giganteum* does not make such a draft on the gardener's patience as is often supposed. The bulbs usually flower in the fifth year from the time of sowing, and if those who prefer not to raise their stock from seed buy three-year-old bulbs, they should have but two years to wait for a display. "Flowering" bulbs, which occasionally find a place in catalogues, should be avoided, for, like old people, they resent being moved to new quarters. Twelve years ago a friend of the writer sent to Holland for fifty of the largest bulbs of the species obtainable, and planted them with due ceremony. Nothing more was ever seen of them!

It is true that the bulbs of *L. giganteum* die after flowering, but they leave offsets

behind to carry on the race, and in this way a colony forms itself in a few years. When a bulb throws up a stem, the ground about the roots should be mulched with leaf-mould mixed with spent horse manure or cow dung, and if watering is forgotten in a long drought the bulbs will suffer. *L. giganteum* is naturally a shade plant, but in this country it may be placed in full sun, provided always that the sun does not bake the ground about the roots, so that the latter may be cool and moist in a dry time.

The hybrid Lily (Fig. 74) which derives its name from the home of its raiser—the late Mrs. Backhouse, of Sutton Court, near Hereford—is one of a series of *L. Martagon-Hansonii* crosses which began in 1891 with the appearance of *L. Marhan*, a hybrid between *L. Martagon album* ♀ and *L. Hansonii* ♂ made by Mr. G. C. van Tubergen. Four years later this was followed by *L. dal-hansonii*, the result of a cross made by Mr. C. B. Powell between *L. Martagon var. dalmaticum* ♀ and *L. Hansonii* ♂, and later by a number of varieties which Mrs. Backhouse raised by crossing *L. Martagon album* ♀ with *L. Hansonii* ♂, and the progeny backwards and forwards to the nth generation. Opinions as to the merits of hybrid Lilies will always vary, no doubt, but this particular named variety combines some of the good points of each parent. Like *L. Marhan* it seems to have the constitution of *L. Hansonii*, which is saying a good deal, and as soon as it is available in quantity it should make a decorative garden plant. If the progeny of this and other hybrid Lilies is to remain true, they must be raised from bulb scales, leaf offsets or root bulblets, for they do not breed true from seed.

A peculiarity of these *L. Martagon-Hansonii* hybrids is the profuse freckling of the petals, which comes, no doubt, from the mother's side. In 1911 the writer fertilised a lemon-tinted *L. Martagon album-Hansonii* hybrid with pollen from *L. Martagon album*, and the result was a pale, straw-coloured flower so heavily freckled that the ground colour was almost hidden.

When *L. Batemanniae* (Fig. 75) and the old variety of *L. Thunbergianum* called *venustum* are grown together, the two are seen to be almost identical in colour, but the growth of the former is usually more vigorous than that of *venustum*, and it has a flower flatter and less cup-shaped; in that respect it differs from all the varieties of *L. Thunbergianum*. The Lily is attractive because of its rich colour—a clear apricot, without any freckling—but it does not seem easy to grow and the foliage has an unhappy way of shrivelling prematurely—sure sign of some fault in cultivation. The fact that, in the wet weather of the past few weeks, the foliage has kept green should be laid to heart by Lily growers.

The bulb, which is relished by the Japanese, is cultivated in light soil near Osaka, and before the war was marketed locally at about three for a penny; it derives its name from Mrs. Bateman, an enthusiastic amateur of Lilies, for whom Dr. Wallace, of Colchester, named the plant, evidently under the impression that it was a species. The bulbs are often confused by merchants with those of *L. Maximowiczii*.

Another Lily of the Isolation section is *L. Thunbergianum var. alutaceum* (Fig. 76), but in this case the light orange, almost yellow, petals are heavily freckled with purple spots, and the flower takes more the shape of an upright chalice than that of *L. Batemanniae*. It is not easy to keep in this country, though a summer such as the present suits it admirably. It is not generally known that the numerous varieties of *L. Thunbergianum* marketed by Japanese bulb merchants are natural forms. A. Grove.

(To be concluded.)

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XVI.—THE TSANGPO-SALWEEN DIVIDE.

WE had now, as I stated on p. 131, entered on a barren, treeless country. But if there were no trees, there were, at any rate, plenty of flowers. For perhaps three months in the year—certainly not longer—the cliffs, the pastures, even the great grim screes, which from a distance look as naked as a cinder tip, are many-hued with flowers. For the rest of the year there is nothing but snow and dust, a parching drought and a howling wind. We had arrived during the height of summer.

Crossing the pass, I found a yellow-flowered *Meconopsis* still in bloom—the last to flower of the three big yellow-flowered *Polychaetia* group, and the most loftily situated species of all, ascending as it does to over 17,000 feet. Indeed, it scarcely occurs below 16,000 feet. It corresponds in this respect to *M. brevistyla* of West China, though it is not that plant. Coming down to rather lower levels, on ancient moraines and turfy banks, there grew in abundance a prickly blue-flowered Poppy, long past its early prime, but flowering yet—which despite its prickles, at first glance I took to be a "*Primulina*." It was not the "dwarf" with sky-blue flowers to which we were accustomed since the flowers were not sky-blue (or at least only occasionally or accidentally so), still less were they fragrant. Nor was it the violet or navy blue flowered dwarf (probably *M. impedita* var. *Morsheadii*) we had seen so often—the flowers were something between dark and light blue. No. This plant sent up a large number—sometimes thirty or more—one-flowered, apparently basal scapes, but sometimes at least there was the trace of a stem with two or three pedicels springing from its extreme base. Indeed, the inflorescence was usually in the form of a flat pyramid, or a wedge, the "stem"—if it could be so called—forming the apex. Yet the plant, despite its "*Primulina*" form, was as prickly as any "*Aculeate*" Poppy. Clearly, I had come upon *M. horridula* var. *typica*. That plant is recorded from all over the Tibetan plateau, to north, west, and east, from just such country as this, as well as from Sikkim—it must be one of the most widely-distributed species in Tibet.

Later, descending a long valley from the pass, I found, both in flower and fruit, a pale blue-flowered "*Aculeate*" Poppy, prickly to the same degree as the alpine plant, and with identical foliage, style, stigma, and ovary. Only in habit and flower colour (the flowers were invariably sky-blue) did the two plants differ; on no other ground was it possible to separate them, in spite of their very dissimilar appearance. For this sub-alpine plant had a central stem 9 to 15 inches high bearing numerous long, ebracteate, one-flowered pedicels, and a few basal one-flowered scapes. It was in fact, the so-called *M. racemosa*, or more accurately, *M. horridula* var. *racemosa*, despite its pale instead of dark blue flowers. It would appear, then, that *M. horridula* var. *typica* is the alpine form of the plant known as *M. racemosa*. The former occurs between 14,000 and 16,000 feet elevation, the latter between 11,000 and 13,000 feet. In the former, the basal scapes are dominant, the main stem (if present) accidental almost; in the latter, the main stem is the essential feature, the basal scapes being accessory, or even absent in one of my specimens.

There is another possibility. This "*M. racemosa*" was found not only at lower elevations, but on the south flank of the range only.—that is to say, in another climatic region. Sir David Prain states that on the southern face of the Himalaya, the forms with a central

stem are the most common, though the stemless form occurs there too—as indeed it does on the southern flank of the range we are considering. Is it, then, climate rather than altitude which accounts for the difference of habit?

That all three varieties are the same species admits, I think, of no doubt; but I would point out that the degree of prickliness varies a good deal as between the alpine and sub-alpine plants.

I have referred to this matter at some length, since the variations of *M. horridula* have given rise to considerable confusion.

Passing down the valley, we presently came to a small lake, near the lower end of which was a *gompa*, and a few wretched houses. Here we spent three days. We had intended to travel so far as the Salween, but we now realised that it was too far away, so contented

On August 28 we climbed to the top of the pass, hoping to catch a distant glimpse of the Salween, but all we saw was a tangle of mountain ranges with a few very lofty snow peaks in the distance, beyond which, we were told, lay the Salween. This proved to be the highest pass we had yet crossed—nearly 18,000 feet by boiling point.

Here, in this arid, bleak country, we found the most enormous screes piled up at the foot of the shattered ridges: and the flora of these screes was astonishing in its wealth and variety. I collected some twenty species, including a "*Nivalis*" *Primula* (in fruit), several species of *Corydalis*, two of *Saussurea*, two interesting woolly *Labiatae*, one of which smelt very much like the common purple Deadnettle; several *Saxifrages*, a *Sedum*, a *Cremanthodium*, an *Aconitum*, a *Lactuca*, and other things. Most

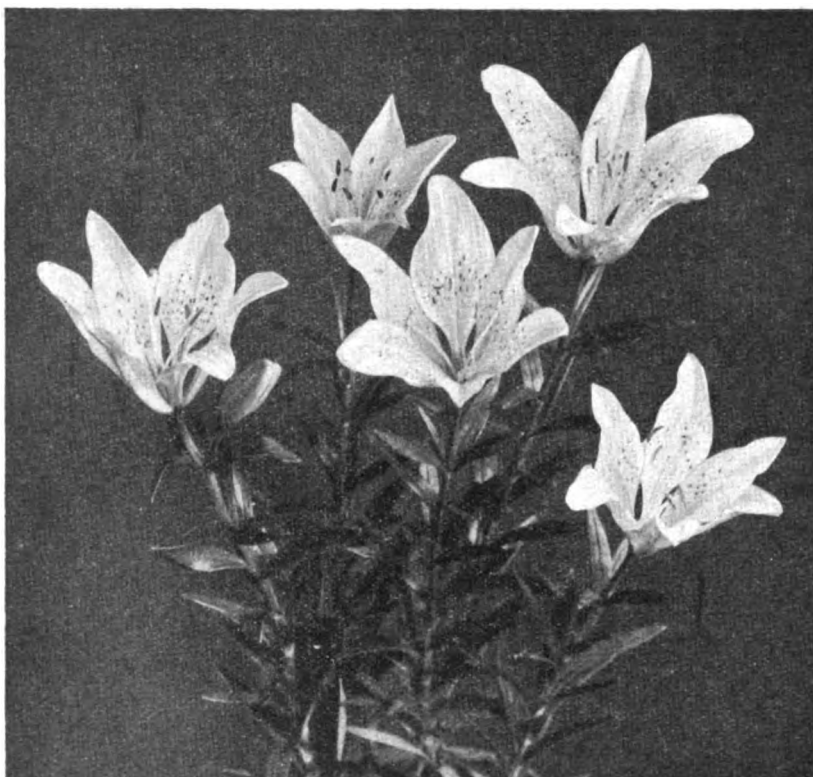


FIG. 76.—*LILIUM THUNBERGIANUM* VAR. *ALUTACEUM*.

(see p. 100).

ourselves with less spectacular, but doubtless more profitable exploration.

The cliffs here were gay with flowers—white and yellow *Sedum*, blue Larkspur, *Cynoglossum*, and *Dracocephalum*, a graceful thing this last, like *D. tanguticum*; crimson *Pedicularis*, and other flowers. In addition to many plants such as one might expect to find—*Potentilla peduncularis* for instance, *Morina*, *Cyananthus*, the pale "*Sikkimensis*" *Primula*—I found here two rather surprising species, a small *Incarvillea*, not unlike *I. brevipes* in appearance, and the far-ranging *Isopyrum grandiflorum*, both in fruit. I have sent home seeds of this plant at least six times. It has certainly been flowered once if not more frequently. Yet it has never become established—indeed, I do not know of any living plants in England at the present moment. However, I always hope that one day it may establish itself, and till it does, I shall continue to collect seeds of it from as many localities as possible. It is a plant worth persevering with.

Besides these flowers there were several shrubs tucked away in sheltered gullies—two species of *Rhododendron* (a "*Lapponicum*" and "*Anthopogon*"), *Lonicera*, *Ribes*, *Caragana*, *Spiraea*, and our old friend *Potentilla fruticosa*.

interesting of all was a *Gentian*, with papery-white, translucent, urn-shaped flowers, ribbed with black on the outside, and closely-packed, rather fleshy leaves, wedge-shaped, and arranged round four sides of a square, with the tissue paper urns standing up in the centre. I have seen a *Gentian* (*G. amoena*?) with somewhat similar foliage, growing on very dry granite rocks in Sikkim, but never such a flower.

The alpine turf slopes at 15,000 to 16,000 feet fairly sparkled with flowers, including vast numbers of *Meconopsis horridula*, several brightly-coloured *Leguminosae*, rosy patches of *Arenaria*, *Gentians*, a *Bladder Campion*, and so on. The soil everywhere was extraordinarily hard, and it was no easy task to dig up these deep-rooted plants.

We awoke next morning to find it snowing hard, so delayed our departure till the following day. On August 30 we started south in fine sunny weather, but had not gone many miles when a fearful blizzard, with hail, and lightning, swept down on us. Eventually we camped at 15,000 feet, wet and cold. Next day we recrossed the great snowy range by another pass over 17,000 feet and descended into more fertile country.

On the pass I saw a dwarf *Aconitum*, large

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, and August 15, 1925.

cushions of a *Potentilla*, a small white-flowered Crucifer, a *Cremanthodium*, a *Saussurea*, and a cushion Saxifrage, these being the highest flowering plants met with. Coming down into the valley, shrubs soon made their appearance again, and there was plenty of the small *Incarvillea*, and also the Poppy ("*M. racemosa*") already referred to.

Another two days' march down the valley brought us to Gyamda, an important place on the road to Lhasa, and about eight days' journey from the H ly City. This was our furthest west. We were now eleven days' journey from our base, and back we had to go.

The eight days' journey down the now rather dry valley to our old base on the Tsangpo, was uninspiring. There were few flowers, and those mostly Labiatae and Compositae. Amongst the former was a fine *Salvia*, with

as common as harmony in her garden. Usually they are lost in the immensity, but occasionally the eye detects such a flaw, and is properly shocked. A few days later I had an example of this, and my feelings were outraged at the sight of *Gentiana ornata*, in all its thrilling blueness, side by side with the big violet *Cyananthus* of lobatus affinity.

Autumn was now coming on apace, even in the valleys. Rose hips and the reddening fruits of *Euonymus* told a tale of summer gone; the corn, too, was gilded, Peaches and Walnuts were ripening, and the brief glory of early summer had long since departed from the hillsides, which were monotonous in their drab tones. A few dull flowers were met with—a magenta-coloured *Swertia* for one. More interesting were the bright blue *Onosma*, first seen in July, and now seeding; a stout two-foot *Incarvillea*, also in fruit (I had met with

ORCHID NOTES AND GLEANINGS.

CATTLEYA O'BRIENIANA.

THE records of this distinct Orchid have been so conflicting that a note giving the main points will be useful, and may lead to disclosures from some of the many who have had to do with its introduction and cultivation in gardens.

My first acquaintance with it was on the occasion of a visit to Messrs. Sander's establishment at St. Albans, in 1889, when I was shown a new *Cattleya*, which had flowered the day before, an importation of which had been received from Minas Geraes.

The habit of the new plant differed from any other kind, and Messrs. Sander thought that they had at last received an importation of *Laelia Jongheana*. The flowers, however, showed that it was a true *Cattleya*, and the only question was, was it a species or a natural hybrid?

The quantity of the plant received seemed to indicate conclusively that it must be a species, for no natural hybrid had ever been received except as occasional plants. It was named in compliment to me, and shown at the R.H.S. meeting without particulars, being duly reported in *Gard. Chron.*, December 14, 1889. Messrs. Sander received an Award of Merit for it on December 9, 1890, and it was recorded as a natural hybrid, but in the later edition of the *R.H.S. Awards* the parentage *Loddigesii* × *dolosa* was inserted, in deference to the report that it had flowered on the continent out of an importation, of *C. dolosa*, and in Sander's *List of Orchid Hybrids* it appears as a natural hybrid, *dolosa* × *Loddigesii*. Reference to the authorities do not help. *Index Kewensis*, Supplementum Primum, gives *Cattleya O'Brieniana*, Hort. ex *Journ. of Hort.* XX (1890) 25 Fig. 4 = intermedia R. Grah. The plant is figured in *Reichenbachia* (Ser. 1, p. 85, t. 40) as *C. Loddigesii* var. *O'Brieniana*, Rolfe.

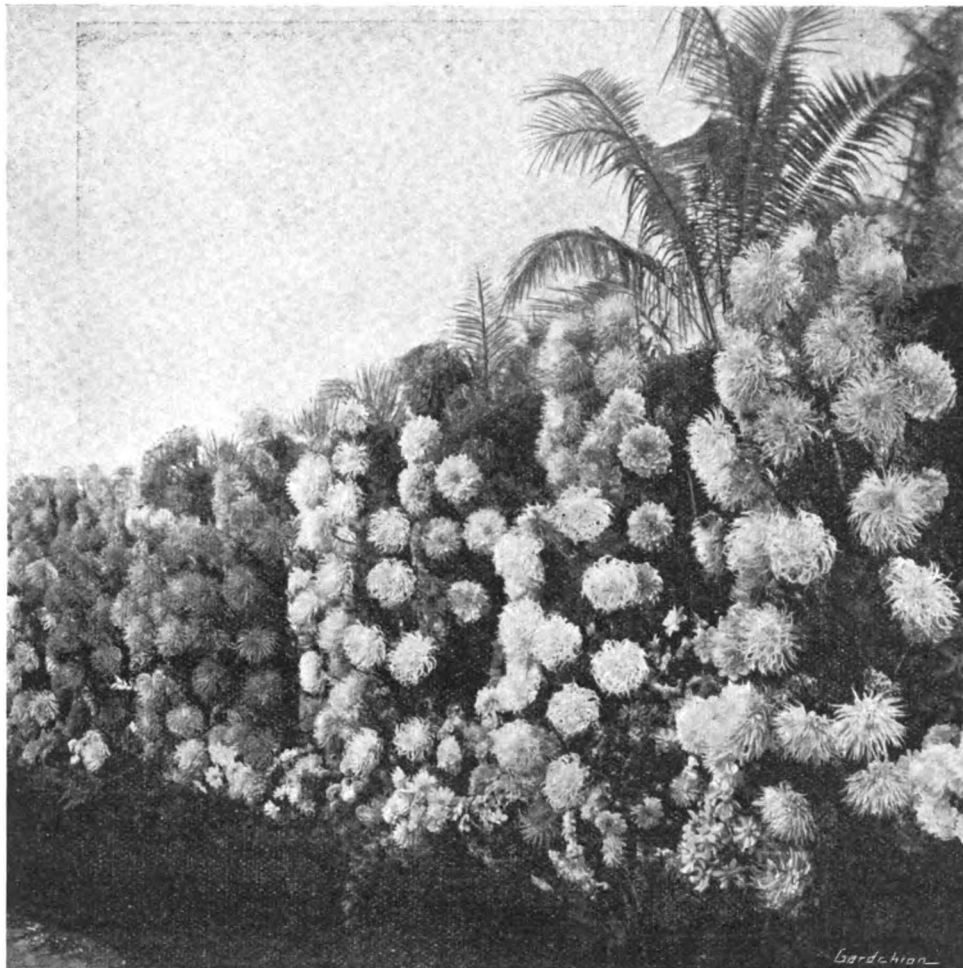
A fair number of plants of a white *Cattleya*, at first said to be a large form of *C. Harrisoniana* alba, appeared and were identified on flowering with *C. O'Brieniana* alba, and under that name Messrs. Stuart Low and Co. obtained a First-class Certificate for the plant. It was fully described in *Gard. Chron.*, July 25, 1910, p. 67, with a significant comment—a white form of this pretty Orchid which is commonly supposed to be a natural hybrid between *C. Loddigesii* and *C. Walkeriana*, but which has been imported in quantity in the typical rose-tinted form.

This rendering agrees with the estimate of M. Forget who collected in Minas Geraes, and is backed by the experience of Orchid growers here who invariably find the Continental *C. dolosa* to be *C. Walkeriana*, indeed, some of the same importation from which *C. O'Brieniana* was said to have flowered were sold in London as *C. dolosa* but proved to be *C. Walkeriana*.

The true *C. dolosa* and its very near ally *C. Schröderiana*, both of which flower from the apex of the fully-matured pseudo-bulb, as in *Cattleyas* generally, always have been, and still are, very rare plants, very little known in gardens. *C. Walkeriana* and its forms nobilior and bulbosa flower from a woody stem produced from the base of the fully-matured leafy pseudo-bulb, but which, although rudimentary, is a pseudo-bulbous growth after flowering. By this habit the species and its forms are easily recognisable, and should make it impossible to confuse *C. dolosa* with it in the manner which it has been to a very great extent.

C. Walkeriana, Gardn., 1843, was named by Lindley *C. bulbosa* in *Gard. Chron.*, 1847, and under that name it was commonly known in gardens, and probably the similarity in sound to *dolosa* had much to do with the confusion of the two plants.

In regard to *C. O'Brieniana* the position is that which I expressed at first—species or hybrid! The quantity imported indicated species, but if hybrid, the parentage undoubtedly is *C. Walkeriana* × *C. Loddigesii*. J. O'B.



[Photo by Kay & Foley.]

FIG. 77.—PART OF MR. H. WOOLMAN'S FIRST-PRIZE DISPLAY OF DAHLIAS AT SOUTHPORT SHOW. (see p. 197).

violet flowers and a white lower lip; also another species of *Dracocephalum*. *Codonopsis convolvulacea* was common everywhere, and an orange coloured *Clematis*, with thick petals as though cut out of felt; the flowers redden as they age, and the combination of orange and ochre flowers nodding over a choppy sea of silver, as the long, feathery fruits ripen, is very attractive. I saw this plant half smothering a *Lonicera* tree laden with orange-scarlet berries, and noted it as a fine combination in a region where there was at this season, not much colour. Another pretty contrast was that afforded by the silver-white foliage of a *Buddleia* mingled with the scarlet berries of a *Cotoneaster*. One may treasure up chance designs of this sort with advantage, but Nature does not always show such good taste by any means, and vile colour schemes are at least

this plant in April, much further west, but have not seen it in flower; it grows also, I believe, by the Chiangka river, where I found it in 1922); and fine tufts of the blue trumpet *Gentian*.

At one *dzong* where we stayed the night, we found quite a delightful flower garden. Here, mixed up together in reckless confusion, were Asters, Hollyhocks, Sunflowers, Pansies, Dahlias, *Tropaeolum*, Roses, Marigolds, *Convolvulus*, Brompton Stocks, and *Pelargoniums*, very like Paul Crampel to look at! It was amazing. We were told that these flowers came from Lhasa and Gyantse—doubtless all had found their way from India originally. Most of them were growing in Bamboo tubes, or in excavated tree trunks and boxes. Anyway, it was the first attempt at a garden we had seen in Tibet. F. Kingdon Ward.

NOTICES OF BOOKS.

Garden Improvement.

WHEN, as is the case in the book under notice, the author mentions many firms, persons, and garden adjuncts, and says something nice about all and sundry: and when, furthermore, the author draws especial attention to copious laudatory reviews from the lay press of a previous work, the present reviewer—all who review books are gentle souls who would not wound—feels that it would be churlish to be critical. But—it seems there always is a *but*—the author tells his readers that his book is intended to be a standard work of reference, so that one needs must be critical.

It seems to be out of place in a book that is expected to be a standard work, to print a list of over 150 advertisers in it. The garden lover usually receives a plethora of catalogues and other advertisements post free, but in this case he is expected to pay quite a good price for the advertisements. The firms and specialities, so advertised, are, no doubt, of the highest repute, but I cannot see their bearing on

but for the most part the Roses must be imagined because very few are apparent.

Probably, to help the garden maker, there are many plans of different types. In those for special subjects, such as annuals and of herbaceous plants, it is unfortunate that the dominant features happen to be something else. At the end of the book there are many pen and ink plans of special gardens which I must confess pass my comprehension.

The reproductions are all very good while the paper and type are excellent. A.

The Making of a Garden.

LIKE John Evelyn, and who knows how many more of us? the writer of this pleasant book "never had any other Desire so strong, and so like to Covetousness, as that which I have had always, that I might be Master at last of a small House and a large Garden, with very moderate Conveniences joined to them, and there dedicate the remainder of my Life only to the culture of them and study of Nature."

How this "Desire so strong" came to be gratified, first with a ten-rod plot of ground at Wimbledon, and finally with a real garden

PUBLIC PARKS AND GARDENS.

For some weeks past an exceedingly pretty effect has been created by the free use of standard Fuchsias in the City of London public garden in Finsbury Circus. Mr. Custance who has charge of this pretty garden has indeed made it "a thing of beauty," and his efforts are much appreciated by the large number of lovers of flowers who visit that garden to inspect and admire the results of his cultural skill. The collection of standard Fuchsias in this garden number no fewer than one hundred plants, in some ten to twelve varieties. The plants are ten years old or thereabouts, and on the occasion of my last visit, were in splendid health and character, and were flowering in prodigal profusion. It is a long time since I saw anything so really interesting. Considering that these plants are housed in a very small glass structure during the winter, when the glass is invariably covered with sooty deposits, and are subject to so much impure air and to severe fogs, it is remarkable that they come through this ordeal, year after year, and do so well in each successive flowering season.

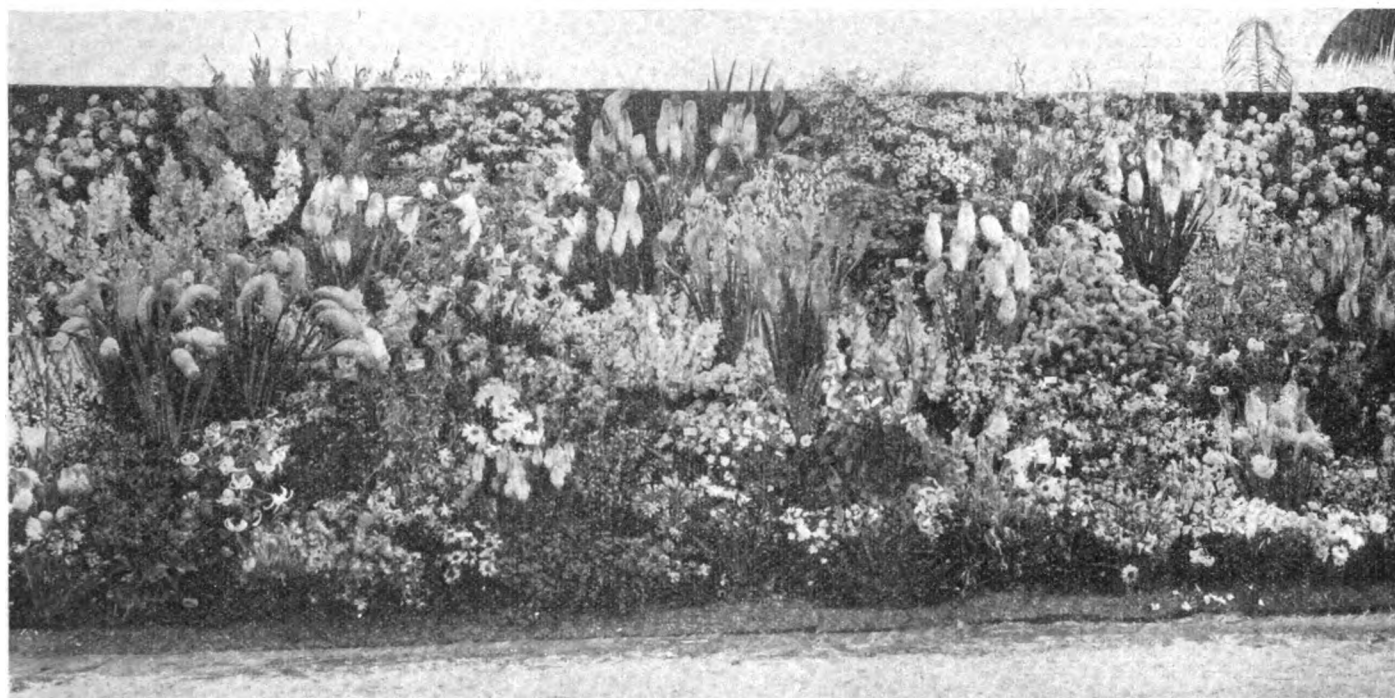


Photo by Kay & Foley

FIG. 78.—MESSRS. M. PRICHARD & SONS' PREMIER GROUP OF HARDY FLOWERS AT SOUTHPORT SHOW. (see p. 177).

Garden Improvement,* and, I fear, the discerning reader will suspect the insidious method of advertisement throughout.

I suppose that most people, when receiving a new book that, as in the present case, is fully illustrated, will first glance at the pictures. Following this rule, I find a most interesting variety of subjects, and amongst them are exhibition groups of Orchids, and another of Potatoes. "Thirty acres of Potatoes in flower." "The interior of the Garden Well at the Infantry Barracks, Redford, N.B." "Cider Apples being gathered by hand . . . for a well-known firm of cider makers." "Building another house to cover an extra acre of land in the Nurseries," for a famous market grower of Carnations. All well-illustrated and very interesting, but I fail to discern any "Garden Improvement" application.

More legitimately Kew and Hampton Court have been drawn upon, though I cannot quite see the subject connection in the famous Vine or the Yew Tree Avenue at the latter show place. The "Author's old Rose garden of about 10,000 trees" is the subject of several illustrations,

in Kent the author tells in a fascinating manner. Miss S. D. H. Moutray Read tells how she took over a wilderness, and, doing practically all the work herself, transformed it into almost, if not quite, the garden of her dreams. It seems to have been a joyous experience for the author was quite happy in her early ignorance, though, early realising that experience is the best teacher, she soon acquired considerable knowledge. No doubt it was this cheerful nature that gave the happy facility in making friends of all classes who came early and oft with offerings for her garden, so that it soon contained a large variety of plants of either garden or sentimental value, and, when fortune was good, both.

While it is not a book for the serious gardener whose mind and fancy runs more to books of reference, *The Making of a Garden*,* would entertain the most experienced gardener, and be of considerable service to the novice.

As already indicated, the book is charmingly written. The "get up" is good, and it is freely illustrated, but, while the pictures certainly do generally tell their stories, most readers will endeavour to forget them and remember only the pleasure derived from the text.

* *The Making of a Garden (One Garden)* by D. H. Moutray Read. Williams and Norgate. 7s. 6d. net

The varieties of which I made a special note were: Marinka, a nearly self salmon-red, flowering in profusion; Display, red tube and sepals, corolla deep rose; Scarcity, bright red tube and sepals, purple-red corolla; Sylvia, a plant that does well, white tube and sepals, carmine corolla; Lord Roberts, broad blood-red sepals, and very large dark plum corolla; Mrs. Marshall, one of the most noteworthy sorts that was doing exceptionally well and which was represented by a large number of plants, flowering most profusely, in groups of plants and by individual specimens. A variety which Mr. Custance says bore the name of Evaburgh but which I have been unable to trace was also worthy of notice. Another good plant, Madame Corneillon, one of the hardy sorts, was especially striking: the colour is scarlet with a white corolla. Gardeners who may be passing through the City of London before the normal period of flowering is passed would find a visit to this pretty garden well-worth their while. D. B. C.

THE Leeds Corporation has decided to undertake the relaying of the sports ground in Roundhay Park for purposes of cricket. It is also proposed to construct a concrete landing stage at the Waterloo Lake.

Garden Improvement, by T. G. W. Henslow. Published by Dean and Son, 29, King Street, Covent Garden. Price 15s. net.

FRUIT REGISTER.

OLD VARIETIES OF DESSERT APPLES.

MANY of the old and neglected varieties of Apples possess a flavour and crispness undeveloped in the newer varieties, and they are, as a rule, more productive.

From time to time many old varieties are brought to my notice, and some are unnamed seedlings, but the following old sorts may prove of interest, especially to the older school of pomologists:—

Wyken Pippin is a fruit below medium size, with a smooth skin that is coloured pale greenish-yellow and flushed dull orange on the side next to the sun. The stem is sprinkled all over with russety dots and patches of delicate russet. The flesh is yellow, tender and juicy. This variety is a delicious dessert Apple; it was found at Wyken, near Coventry, about 1700.

Spice Apple is a fruit of medium size. The eye is open, and set in a shallow, plaited basin; the skin is coloured deep yellow, marked with broad streaks of crimson on the side next to the sun. It is a good dessert sort and of great antiquity, but not to be confused with Herefordshire Spice, Sack Spice, D'Arcy Spice, Brown Spice, or Aromatic Spice. The above variety may be found in the locality of Tarrington, Herefordshire.

Scarlet Nonpareil is an old Apple raised at Kempton Park, near Sunbury, in 1816. It is a first rate dessert Apple, coloured yellow on the shaded side, and stained with deep red and crimson, overlaid with large russet specks, on the side exposed to the sun. It is a fruit of medium size; the tree is a prolific bearer.

Old English Pearmain is the oldest variety on record; its cultivation in Norfolk can be traced back to the year 1200. It is a noted Apple on the borders of Herefordshire, and is planted extensively around the locality of Dymock. The skin is covered with dark crimson, tinged with red and yellow, with large fawn coloured dots. The flesh is yellow, very juicy, sweet and aromatic.

Old Nonpareil is a first-class Apple brought to England from France and planted by a Jesuit in Queen Elizabeth's time. Very large trees of this variety are still in existence in Oxfordshire, also around the districts of Ross and Monmouth. The skin is yellowish-green, covered with large patches of thin, grey russet, and dotted with russety spots, with a tinge of dull red next to the sun. It is a delicious fruit with a crisp, rich, juicy, aromatic flavour.

Margil is a variety second to none, for it ranks as one of the finest dessert Apples in cultivation. It was introduced from Normandy about 1700, and should be included in every orchard and garden. The fruit is of handsome size, conical in shape, with acute angles on the one side, terminating at the crown in five prominent ridges. The skin is orange, streaked with deep red, and covered on one side with patches of russet.

Golden Pippin has been in cultivation since 1600. The skin is coloured rich, deep yellow, the surface being strewn with russety dots. The fruit is small, crisp and sweet, and possesses a rich vinous flavour; where known it is a highly esteemed variety. The season of this old Apple is November to April.

All the above-mentioned sorts are long keepers and of first-rate quality, retaining their freshness until they decay. *Pomona.*

BULLACE THE LANGLEY.

This fine Bullace, which was raised from the Farleigh Damson crossed with Black Orleans Plum, is useful for planting in exposed situations, the tree being of hardy constitution, and makes a fine standard; it also fruits well in the bush form.

Those wishing to plant a quick fence, or hedge, in an out-of-the-way place would be well-advised to bear in mind Langley Bullace. If

allowed to grow untrimmed for a few years, such a hedge would produce large crops. The fruits are late in ripening and most useful for kitchen purposes. *L.*

HARDY FRUIT GARDEN.

THINNING.

It is somewhat surprising that so little attention is paid to the thinning of hardy fruits when such beneficial results are obtained although only a short time is spent in the practice. Take the Apple, for instance. The fruits generally set in clusters, which shortly become very congested and form an ideal spot for egg-laying from the point of view of various moths. When the eggs hatch out and the larvae duly feed on the closely set fruits, they either all drop, or go through a useless life disfigured and deformed.

This, however, is not the greatest evil which results from neglect of thinning; the worst effect is the weakening of the constitution of the tree, consequent on bearing a crop too great for its strength. The remark is often heard, "These trees bear only every other year," as if it were an inherent characteristic of the variety; but in many cases this is not so. The greater part of the tree's energy is normally directed to the production of seeds for a future generation, and if the fruits are too numerous, this energy must necessarily be overtaxed.

It is a good plan, when the fruits are about the size of a Hazel-nut, to thin them with a pair of Grape scissors. The effect will soon be seen in the rapid swelling and development of the remaining fruits, which, if kept clean by proper spraying, will, in the end, produce a greater weight of crop, and certainly of better quality than if all the fruits set had been permitted to remain. Most important of all, good, healthy fruit buds for the following season will have been formed. The same treatment can be applied to Pears, stone fruits generally, and small fruits. Gooseberries, for instance, benefit enormously by judicious thinning; the total weight produced will be greater than if all had been allowed to develop, while the thinnings may be used for preserving. *R. H. Crockford, Horsley Hall Gardens, Gresford, N. Wales.*

GUMMING IN FRUIT TREES.

GUMMING in fruit trees is most difficult to eradicate, and is often the cause of the death of the tree. Fortunately it is restricted to stone fruits being most frequent in Plums, Nectarines, Peaches, Apricots, and Cherries. There are many causes of this trouble, one of the chief being a too free use of the knife. Stone fruits resent hard pruning, and frequently whole plantations of Plums and specimen wall trees of other stone fruits are entirely ruined by severe pruning in winter. If the knife is resorted to to counteract rank growth, gumming invariably results, whereas, the proper method is pruning the roots and pinching the shoots in summer. Another cause of gumming is injury to the bark caused by tight shreds or twine used in attaching the trees to the wall, or in supporting them to stakes. The ties should always be renewed each year. In the case of Plums the grower should encourage the trees to make healthy, short-jointed growths. Sappy, rank growths should be discouraged in a plantation of Plums by root-pruning and by careful light pruning.

In the case of rank growths developing in Peaches and Nectarines on a border, lifting the trees, trimming the roots, and providing a suitable compost (consisting mainly of loam with old mortar intermixed) is the best treatment, which will result in the roots growing much nearer the surface than they were previously.

The object is to keep the soil surrounding the roots in a porous condition; lime freely

sprinkled on the surface of the ground is extremely beneficial to all stone fruits. As gumming commonly results from the bark being injured, the grower should take care that the stems of his stone fruits are never injured by the spade or hoe. Too frequently, trees are badly barked by careless workmen at the time they are planted. *W. Miller, Mill House Gardens, Warley.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. 111-116).
(Continued from p. 175).

MIDLAND COUNTIES.

HERTFORDSHIRE.—The first crops generally are not satisfactory. Apples are fairly good, the best cropped sorts being Lane's Prince Albert, King of the Pippins, Ribston Pippin, and Claygate Pearmain. Pears are a light crop, and Plums a failure, excepting on the wall trees. Plum trees were badly infested with aphids. The heavy rains in late July did much good in cleansing the trees of this pest. Strawberries and nearly all bush fruits were small and poor in quality, excepting Gooseberries. Raspberries especially suffered from drought. Peaches and Nectarines are poor crops, but these trees are making clean, healthy growths. The soil is loam on clay; other parts of the garden are gravelly. *G. H. Hill, Caldecott House Gardens, Bushey Heath, near Watford.*

—The general promise at flowering time was, excepting for Pears, good, but the fine prospect was not fully realised in the case of the out-door stone fruits, Plums being very disappointing, except on walls. Our best cropped Plums are Monarch, Victoria, and River's Early on bush and standard trees. Damsons are very thin, with the exception of Langley Bullace, which is quite our best cropped variety of the Damson family. All kinds of bush fruits are exceptionally good; it is some years since we had such a fine crop of Black Currants. Apples are promising, and this applies to nearly all varieties. Dumelow's Seedling (Wellington) is especially good. The trees are healthy, and, considering the long spell of drought, very free from pests. Strawberries were a good crop of fine quality berries, but the season was short. Rain at the time of writing, is sadly needed, the fall for the past six or seven weeks only amounting to 30 in., and the soil is cracking badly, it being a stiff, retentive clay. *Edwin Beckett, Aldenham House Gardens, Elstree, Herts.*

—Apples are a very heavy crop and in spite of the very dry weather of early summer they continue to swell most satisfactorily. Cox's Orange Pippin is very good this season, and the fruit is very clean and free from scab. Pears, on old established trees, are a very poor crop, but trees that have been recently planted are carrying very good crops indeed. Plums are a good average crop, especially Victoria. Kirke's Blue and Coe's Golden Drop. Damsons are also very good. Cherries, both sweet and Morello, were quite up to average. Small fruits were a heavy crop, Strawberries being exceptionally fine where attention was given in watering, and the same is true of Raspberries, indeed all small fruits are very good. *T. Pateman, Brocket Hall Gardens, Hatfield.*

—The fruit grower has again experienced a season fraught with anxiety. There were those who felt that the summer of 1924 was not likely to aid this year's crops and were possibly surprised at the wealth of blooms and later, the apparent good setting of large quantities of Plums and Cherries. In spite of this, the fruit fell, whatever attention was given. It may be said that inclement weather

other than frost is equally damaging to fruit crops. Apples continued to remain a heavy crop until very hot weather set in, when severe dropping took place. After rain fell red Currants appreciably increased in size and quantity, although they were very tart this year. Raspberries were good, and Strawberries also, but these fruits had a comparatively short season. The soil here varies; the greater portion overlies clay, while other parts have a sandy or chalky sub-soil. *A. J. Hartless, King's Walden Bury Gardens, Hitchin.*

—The fruit crops are very poor and the trees have suffered greatly from the spring drought. At the time when the trees were in blossom the weather was very cold and windy, with night frosts. The trees have been very free from aphid and other pests. The soil is a hard clay, and when the roots get down into it the fruit crops are soon adversely affected. *Richard Staward, Ware Park Gardens, Ware.*

LEICESTERSHIRE.—With a good show of blossom on all fruit trees there was every prospect of bounteous crops of fruit, but through unforeseen circumstances, only very poor crops resulted, and many trees are barren of fruit. Plums and Pears are failures. Bush fruits gave good crops, but through want of rain, the berries were very small. The soil is heavy, lighter in some parts of the garden. *W. Cœ, Prestwold Gardens, Loughborough.*

NORTHAMPTONSHIRE.—Although the Apple crop, at the time of writing, is an average one, the continued drought is causing large numbers to drop. Plums blossomed freely, but owing to the wet and cold weather at the time the fruits failed to set. Peaches and Nectarines are very light crops, but the few fruits we have promise to be of first-rate quality. Currants and Gooseberries were very good. Raspberries that were heavily mulched during April gave a bounteous crop, and the fruit was of exceptional quality. Strawberries were an average crop and the fruit very good, but the season was a short one. *F. W. Gallop, Lilford Hall Gardens, near Peterborough.*

—We had good crops of all bush fruits. Black Currants were exceptionally fine, but Red Currants were rather small. The Apple crop promised well, but the fruits of many varieties dropped owing to the continued drought in July. Strawberries have done well in spite of dry weather, but a large number of plants of some varieties have been scorched up since the fruit was gathered, and are of no use for another season. *Arthur R. Searle, Castle Ashby Gardens, Northampton.*

NOTTINGHAMSHIRE.—Our soil is very light, overlying red sand, and as a result of the prolonged drought during June and July, Pears and Plums dropped almost to the last fruit. Apples are promising well, caterpillars being less troublesome than usual, although little spraying was done. Strawberries, Raspberries, and all small fruits were good average crops, ripening early and finishing quickly. The rainfall from June 1 to July 25 was only 0.41 inch. *S. Barker, Clumber Gardens, Worksop.*

OXFORDSHIRE.—The fruit crops in this district are under the average. Apples, generally, are about half a crop. We have a fair sprinkling of most varieties. Pears scarcely showed any bloom this season, consequently we have very few of these fruits. Plums and Damsons bloomed profusely, but orchard trees never set a fruit, owing to the cold wet weather at the time of blooming. There is a fair crop of Plums on walls. Small bush fruits of all sorts are plentiful and good. Strawberries were a light crop, but the season was short owing to the prolonged drought of July. Nuts promise well. Aphid has been most persistent in its attacks, entailing a lot of labour to keep the pest under. *Ben Campbell, Cornbury Park Gardens, Charlbury.*

—Fruit trees looked very promising in the spring, there being a good show of blossom, but unfortunately, a good deal of it failed to

set, owing to several cold days. Of Apples, we have an average crop, the fruits being very clean. Pears are under the average, and so are Plums, Apricots, and Nuts. Small fruits were extremely good, the best we have had for several years. The soil is a very heavy black earth, with a sub-soil of clay. *B. Elkington, Wardington Lodge Gardens, Banbury.*

—The fruit crops, generally, are very satisfactory. Strawberries were not quite up to the standard size owing to the early and prolonged drought, but the flavour was excellent. Pears are a light crop owing to the wet season of 1924, which resulted in the trees making too much wood at the expense of fruit buds. Apples are very good, and insect pests have so far been very little trouble. Sparrows are increasing in numbers and causing me a lot of trouble in the spring, especially amongst best dessert Plums. The month of May was cold and wet (rainfall 3.48 inch), which looked like spoiling the prospects of a good fruit year, but on the contrary, it enabled the trees to carry on through the severe drought of early summer. The soil is a heavy loam over stiff clay. *Victor H. S. Gammon, Eynsham Hall Gardens, Witney.*

STAFFORDSHIRE.—The season of 1925 has been the most disappointing for fruit I have ever known. Damsons and Plums, of which there are great numbers grown in this district, promised large crops, and the fruits set well, then dropped when about the size of wheat grains. Not so on the wall trees, where a fair crop developed. Pear trees did not show much bloom. We had good crops of Pears for two years in succession, and the midge has accounted for most of the fruits that set this season. Apples are a failure, excepting Blenheim Pippin. The Apple blossom was small and did not open kindly. The Apples we have promise well. Insect pests have been bad. Aphid, Apple-sucker and caterpillars have been the worst pests, but bush and wall trees have nearly grown away from them now, and the growth is much cleaner. On our stiff clay soil the trees generally did not feel the effects of the spring drought so much as on lighter soils. *J. W. Mislin, Wood-seat Gardens, Rochester.*

—The fruit crops are, on the whole, very light, the Apple crops being very disappointing after the amount of blossom the trees produced. We have to take into consideration the heavy crops of last year; the Pear and Plum crops are practically nil. Small fruits, such as Strawberries, Gooseberries, Raspberries, and Currants, were very good in quality, and above the average in yield. The soil here is gravelly, and dries out quickly. If clean trees and well-swelled fruits are to be made a special objective, the necessary expense of spraying, say twice a year, must be scrupulously attended to. *Edwin Thomas Gilman, Hillside, Rugeley.*

—Apple trees made a wonderful show with blossom, and the flowers opened in perfect weather. Plums and Pears also bloomed very well, but in bad weather. The chief cause of the failure of the fruit crops in my opinion is that the latter part of last year was unfavourable to the ripening of the wood the weather being cold and sunless. Our soil is a sandy loam on sandstone. *Herbert Cragg, Aldershave Gardens, Lichfield.*

WARWICKSHIRE.—Fine show of blossom resulted in an almost complete failure of the fruits to set, due to the very unripened state of the fruit-bearing wood. In many cases, the few fruits that did set dropped badly. Strawberries bloomed very heavily, but owing to lack of rain, this crop was a failure. Our soil is of a very light, sandy nature, overlying sand. *Burton Gaiger, Wellesbourne House Gardens, Warwick.*

—With the exception of Strawberries and small fruits, the fruit crops are very disappointing, and although there was an average crop of Strawberries, these, owing to the hot, dry

weather of June, were soon over, and on the small side. Pears, Plums, Apricots, Peaches and Nectarines, are almost all failures. There was an average amount of bloom, but owing to cold, easterly winds in May, and drought in June and July, very few of these fruits set. Apples promised well but are now falling badly. The rainfall during June was only 0.12 inch. *H. F. Smale, Warwick Castle Gardens.*

(To be continued.)

VEGETABLE GARDEN.

CARDOONS.

THE Cardoon is a native of Southern Europe, and is much more widely grown on the continent than in this country. Where a large variety of vegetables is in demand, however, it is well-worth growing, and makes a valuable addition during the autumn and winter from which a skilful cook will present an excellent dish. The very fleshy mid-ribs of the inner leaves form the edible portion of the plant, and they may be used as a vegetable and a salad, as well as in soups.

The plant is a vigorous grower, needs an abundance of moisture, and should be grown in trenches on light soils, though it is preferable to grow it on the flat in retentive soils. So soon as the plant finishes its growth, which is about the end of August, blanching should be commenced, as it takes several weeks to complete the blanching process satisfactorily. It is best done by gathering the leaves carefully together and wrapping bands of hay around them.

If grown in trenches the soil may be levelled up, but if the plants are sufficiently wrapped with hay bands no further earthing is necessary.

The Cardoon does not withstand much frost, therefore on the approach of very severe weather the plants should be lifted and stored in a suitable shed for winter use. *W. Auton, Pyrford Court Gardens, Woking.*

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Grapes at Shrewsbury Show.—Referring to the Black Hamburg Grapes at the recent Shrewsbury Show, it is worth recording that both the first prizes for Black Hamburg Grapes, viz., for a pair and a single bunch respectively, in the open classes, were again won by the Earl of Coventry, (gr. Mr. W. H. Wilson), for the sixth successive time, which must surely be a record at this show. Each year Mr. Wilson's bunches have been remarkable for the fine colour and perfect finish of the berries. *E. J. Parsons, Worcester.*

Deutzia scabra latiflora.—It has been brought to the notice of the Royal Horticultural Society that the above is the correct name of the plant which received an Award of Merit on June 23 under the name of *Deutzia scabra latifolia*. *W. R. Dykes, Secretary, Royal Horticultural Society, Vincent Square, Westminster, London. S.W.1.*

Gladiolus Queen of Somerset.—At the Royal Horticultural Society's fortnightly meeting on the 25th inst., we were given an Award of Merit for a new Gladiolus, which we had named White Lady. As this name had already been appropriated for a Gladiolus, the Award was made subject to our re-naming our new introduction. "Queen of Somerset" will be the name under which it will be known from now. *Kelway and Son, Langport, Somerset.*

SOCIETIES.

SOUTHPORT FLOWER SHOW.

Concluded from p. 177.

AUGUST 26, 27, and 28.—We are glad to be able to report the unqualified success of the great show at Southport. Tickets of admission sold freely for several weeks previous to the Show and during the last week of the "reduced price" period additional clerks had to be engaged to cope with the demand. The total attendance for the three days was 58,450 as compared with 45,349 in 1924. The total receipts come to £7,000 as against £4,882 a year ago. On the opening day there was no question as to the horticultural success of the Southport Show, and by the end of the second day when the total receipts amounted to £6,000—as compared with a grand total of £4,882 from all sources in 1924—the financial success of the undertaking was assured. In 1924, in addition to the sum for more or less permanent fixtures, and spread over a period of five years, there was a debt of £2,000 carried forward. It will be seen, however, that this amazing function has been so splendidly patronised, that in the second year it has paid its way and greatly reduced the adverse balance on the first show.

So far as we can remember, no other show has, in its second year, been honoured by an official visit from the Council of the Royal Horticultural Society. The deputation was a small one, possibly because of the holiday season, and consisted of Mr. W. A. Bilney, Mr. W. Cuthbertson, and the Secretary of the Society, Mr. W. R. Dykes. The awards made by the deputation are given in another column.

On the eve of the show the members of the R.H.S. deputation and the judges were received by the Mayor, Dr. R. Anderson, in the Mayor's parlour, at the Town Hall, and the function was a very pleasant one. Mr. W. A. Bilney returned thanks to the Mayor for the hearty welcome all present had received.

On the opening day the Mayor entertained to lunch, at the Prince of Wales Hotel, the members of the R.H.S. deputation, the judges, pressmen, and the leading exhibitors. Mr. Madison, Mayor of Shrewsbury, proposed "Continued success to the Southport Show," and observed that there was nothing but friendly rivalry between Shrewsbury and Southport in regard to their respective horticultural shows; if Southport should excel Shrewsbury, the latter town would be very pleased and proud because the Shropshire Horticultural Society had done all it possibly could to assist Southport in its initial effort. In his opinion, Southport had already "arrived," and in its first year had obtained a measure of financial support which it took the Shrewsbury Society about thirty years to reach. Southport was fortunate, he concluded, in having as its Show Secretary such a capable advertising manager as Mr. T. Wolstenholme, and in having for its Show Superintendent such a horticultural genius as Mr. Clarke, the Parks Superintendent. In responding, the Mayor referred to the kindnesses received from Shrewsbury and other Societies, to the great honour conferred upon Southport by the presence of a deputation from the Royal Horticultural Society, to the generous support accorded their efforts by the Press, to the enterprise and personal interest of Mr. Clayton and Mr. Wood, Chairman and Vice-Chairman of the Show Committee, and their Committeemen; and to the untiring energy, zeal and good nature of Mr. Wolstenholme and Mr. Clarke.

On the following day, the judges and leading exhibitors were entertained to lunch at the Victoria Hotel, by the Southport Rotary Club, under the Presidency of Mr. Riley. After lunch, Mr. T. R. Hayes, of Keswick, gave an address on "Rambles in Lakeland, and on the Alps." Mr. Hayes dealt with scenery and plants in a delightful manner, and as he is a great lover of Wordsworth, his address was

sprinkled with apt quotations from that great poet and lover of nature.

ORCHIDS.

Messrs. J. AND A. McBEAN, Cooksbridge, were the only exhibitors in the class for a group of Orchids arranged on a space twenty feet by four feet; they were awarded the premier prize of £25 and the Hartley Silver Challenge Trophy. The group was remarkable for its fine *Odontoglossums*, especially for so late in the season. *Oncidioida Cora*, *Vanda coerulea* delicata with a pink lip, and for the numerous splendid examples of *Laelio-Cattleya Profusion*, a handsome hybrid showing its *Hardyana* descent. Several Certificates and the Gold Medal of the Manchester and North of England Orchid Society were awarded to the Sussex firm.

In the trade excluded section the Hon. G. VESTY, The Warren, Birkdale, won the first prize and the Pott's Trophy for a group of Orchids arranged on a space six feet by four feet. *Vanda coerulea*, *Cypripedium Maudiae*, and *Odontoglossum hastilabium* were conspicuous specimens; second, J. McCARTNEY, Esq., (gr. Mr. C. F. Potts), Bolton, who had a very fine example of *Cattleya Atalanta*. The Silver-Gilt Medal of the Manchester Orchid Society, was awarded to each of these competitors. Mr. McCARTNEY led for six Orchids in bloom, for three Orchids—showing *Laelio-Cattleya Soulangue*, *Cattleya Hardyana alba*, and *Dendrobium Phalaenopsis*—and for one specimen, with *Laelio-Cattleya Dominiana*.

ROCK GARDENS.

Rock gardens make a distinct appeal to visitors to flower shows, and those arranged at Southport, in competition for the £100 Perpetual Challenge Cup and a cash award of £75, were no exception to the general rule. The five exhibits were arranged close to the entrance to the Victoria Park. The coveted first prize was won by Messrs. T. R. HAYES AND SONS, of Keswick (Fig. 71), with a delightful arrangement of weather-worn greystone, a tiny water-fall and a descending series of moorland lakelets. In naturally artistic disposition of rocks and plants the Keswick design was eminently satisfactory, but in regard to colour, the planting left something to be desired. Of course, at this season of the year the number of flowering plants available for the creation of bright colour effects is much smaller than in the spring time. Nevertheless, the Messrs. HAYES had goodly colonies of dwarf *Campanulas*, *Gentians*, including *G. Farreri*, a fine selection of *Ericas*, and numerous small Ferns in the shaded parts. Mr. P. GARDNER, Addingham, near Ilkley, won the second prize of £50 with a rather flat but otherwise good design furnished with *Heaths*, *Campanulas*, and *Gentians*. Third, Mr. J. RIGG, Kew Nurseries, Southport, whose wide garden, wandering stream, and Lily pool attracted a great deal of attention; fourth, Mr. J. F. RASHLEY, Mytholmroyd; fifth, Messrs. W. BROWN AND SON, Ormskirk.

Close to their own rock garden, Messrs. T. R. HAYES AND SON had a pleasing Heath garden, well-designed and planted and very attractive.

The exhibits in the class for a "Group of aquatic plants and flowers, with water pool," were as good as could be expected, considering the limit of ten feet by eight feet. The three groups were too close to each other and all designed on the same general principle. As examples of what is more or less possible in a small garden such exhibits have their value, but in our opinion, the schedule specification needs revision before the class becomes a satisfactory one. We suggest that this class be transferred to the "trade excluded" section, and another "open" one provided for an aquatic and bog garden, with, of course, more space allowed. On this occasion the exhibitors had as much rock garden as water garden. First prize was won by Messrs. T. R. HAYES AND SONS; second, Mr. K. THIRKILDSEN, Kew, Southport; third, Mr. P. GARDNER, Addingham.

ROSES.

The Winterbottom Challenge Trophy, a Gold Medal and £25 made up the first prize offered in an open class for a collection of Roses arranged on a space forty feet by four feet, with a height limit of seven feet. There were two competitors, and Messrs. S. MCGREDY AND SON, Portadown, were easy first prize winners with a grand lot of clean, bright flowers arranged chiefly in vases and baskets. The massing of the blooms of each variety in big baskets was very effective. A few prominent sorts in this fine collection were *Mabel Morse*, *Gwyneth Jones*, *Diadem*, *Admiration*, *June Boyd*, *Betty Uprichard*, *Margaret Dickson Hamill*, *Lord Charlemont*, *Lord Lambourne*, and *Doris Trayler*. Messrs. BEES, LTD., were awarded the second prize for a bright display in which *Sunstar*, *Betty Uprichard*, *Independence Day*, and *Los Angeles*, were conspicuously good.

A Challenge Cup and £12 were offered as the premier award for the best group of Roses arranged in a space of twenty feet by four feet, and these were won, as in 1924, by Mr. THOMAS ROBINSON, Nottingham, whose columns of blooms were very effective. The flowers were fresh and bright and of quite good size for the time of year. Mr. ROBINSON made good use of, among others, the varieties *Hortulanus Budde*, *Christine* (of rich golden colour), *Golden Emblem*, *Lady Inchiquin*, *Betty Uprichard*, *Emma Wriht*, *Madame Butterfly*, and *Etoile d'Holland*. Mr. ROBERT WRIGHT, Formby, followed with a comparatively poor and flat display.

The best amateur's group of Roses was contributed by Mr. C. DIXON, Sandyside Park, Sheffield, and was sufficiently meritorious to receive a Silver Medal of the National Rose Society, in addition to the cash award; second, Mr. BLAIR, Congleton. Mr. G. GARRATT, Lancaster, also won a N.R.S. Silver Medal and first prize for a set of two dozen Rose blooms, and he showed capital flowers of *Avoca*, *George Dickson*, *Frau Karl Druschki*, *Mme. Jules Gravereaux*, and *Gorgeous*; second, Mr. C. DIXON. Mr. F. J. HARRISON, Ulverston, an old and successful competitor, showed the best dozen blooms, and Mr. W. MARTINEAU, Box Moor, Herts., had to be content with second place. Mr. C. DIXON had the best basket of not more than twelve blooms of one variety, winning with *Amy Hartmann* in good condition.

FLORIST'S FLOWERS.

The two exhibits in the class for a group of *Begonias* were so entirely distinct that the competition between them was a fiasco. The Schedule requires "a group of *Begonias* in pots, hanging baskets, and/or cut *Begonia* blooms, to be staged in water. Ferns or other foliage plants may be used." The space allowed was twenty-five feet by four feet. Messrs. BLACKMORE AND LANGDON, who showed fine plants representing splendid varieties in their usual excellent style, won the premier award of £20, and would have been difficult to beat in a level competition. Second prize was awarded to Mr. ROBERT LAWRIE, Carnwath, Lanarkshire, who displayed cut flowers solely, with a few Fern fronds with them. The blooms were of good quality, and each one was placed in a small specimen vase. As the heights of the vases did not vary much, the display presented a very flat appearance, and it does seem very desirable that there should be two classes in future, one for cut flowers, and one for plants, otherwise the class will present a comic opera appearance.

The Rowntree Challenge Silver Trophy offered for the best collection of perpetual-flowering *Carnations* arranged on a space of twenty feet by five feet, with a limit of ten feet in height, was secured by Mr. C. ENGELMANN, Saffron Walden, with a splendid group of cut flowers, well-arranged. A variety we made a special note of was named *Joy*; this is pure white, heavily fringed, and very sweetly scented. Mr. ENGELMANN also won the trophy in 1924, but on this occasion he was the only exhibitor in the class. The Rudolf Challenge Trophy

offered for the best collection of Carnations arranged on a space ten feet by four feet fell to Messrs. KERR LUXFORD AND CO., Harlow, who had a capital exhibit; this firm also obtained a similar award in 1924.

The exhibits in the class for a group of border Carnations were poor, owing, probably, to the lateness of the season and the recent heavy rains and storms. Mr. W. WEAVER, Mold, won first prize, and Mr. GRIFFITHS the second.

Gladioli, in groups, made a very attractive feature. There were four entrants in the class for a collection of Primulinus varieties arranged for effect on a table space of thirty feet by four feet, with a height limit of seven feet. The schedule required exhibits arranged for effect. Messrs. W. ARTINDALE AND SON,

Messrs. JARMAN AND CO., Chard; third, Messrs. DICKSON AND ROBINSON, Manchester.

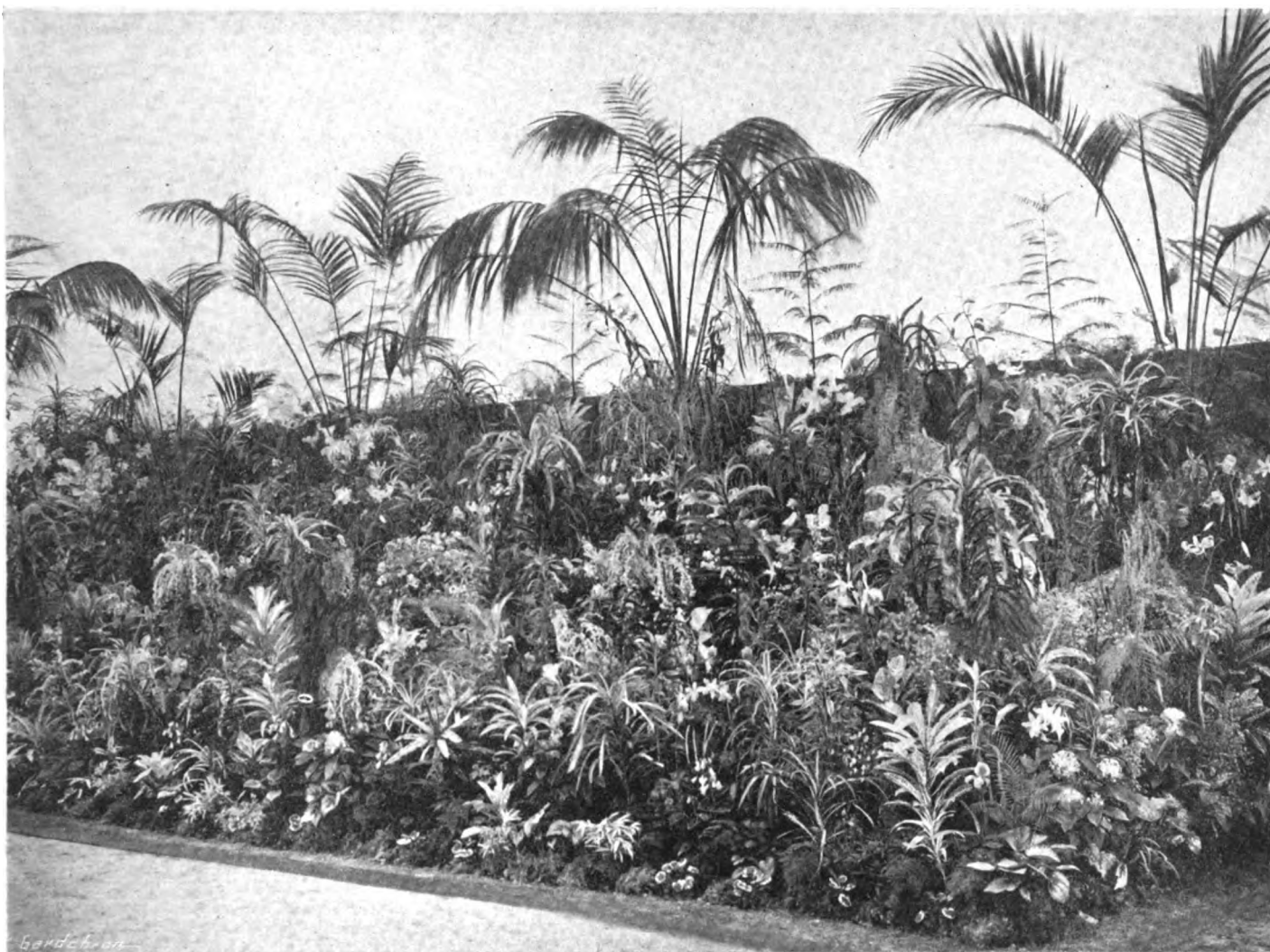
Messrs. HEWITT AND CO., Solihull, were the only exhibitors of a group of Delphiniums, and they were awarded a first prize.

Large-flowering Gladioli were well-grown but not too well shown by certain exhibitors, notwithstanding that the flowers had to be arranged for effect on a ground space of 100 square feet. The expression "ground space" may need to be defined in future schedules, but we feel sure the definition will not permit the use of tiered staging. Messrs. W. ARTINDALE AND SON, Sheffield, had good blooms and easily the best arrangement; second, Messrs. HEWITT AND CO.

Messrs. BEES, LTD., had the best eighteen

best dozen blooms of similar varieties. Mr. J. HOLDEN, Nelson, showed the best set of twelve Viola blooms, but Mr. T. WILSON, Neilston, Glasgow, excelled in the class for two dozen flowers with a first-class exhibit composed of very fine blooms such as are rarely seen in the south of England.

The Clay Trophy, Silver Medal of the National Viola Society, and £5 were won by Mr. H. J. MILNER, Handsworth, Birmingham, for the best display of Violas and Pansies, with a rather formal exhibit of fine flowers; second, Mr. E. CLEGG, Dewsbury; third, Mr. F. DENTON, Thornhill, Dewsbury. For forty-eight fancy Pansies, distinct varieties, shown on boards, Mr. ALEX. FORREST, Kirknewton, Midlothian, won in a keen struggle for the premier position,



[Photo by Kay and Foley.]

FIG. 79.—MESSRS. J. CYPHER AND SONS, FIRST PRIZE ARTISTIC GROUP OF FLOWERING AND FOLIAGE PLANTS AT SOUTHPORT SHOW (see p. 177).

Sheffield, won the Stephenson Challenge Trophy with a display that was easily the best in effective arrangement and design, and compared favourably with the other groups in the matter of quality. The Sheffield firm set up their flowers in baskets and dark coloured vases of various sizes, the receptacles harmonising admirably with the bright hues of the Gladioli.

Dahlias were a splendid feature in the class for a collection, any varieties, arranged on a space forty feet by four feet. Mr. H. WOOLMAN, Sandy Hill, Shirley, Birmingham, was awarded the Silver Challenge Trophy and £17 offered as the first prize (Fig. 77). Mr. WOOLMAN showed Cactus varieties to great advantage, and staged them well; other sections were represented in this handsome and colourful display, but Cactus varieties were the main feature. Second,

varieties of hardy flowers, and were followed as placed by Messrs. S. T. DOWNHAM, Lancaster, and Messrs. M. PRICHARD AND SONS. For a dozen distinct varieties of herbaceous Phloxes, the prizes fell, in order, to Messrs. BEES, LTD., Mr. S. T. DOWNHAM, and Mr. K. THIRKELDEN.

PANSIES AND VIOLAS.

These delightful flowers made an unusually attractive feature in one of the large supplementary tents, and the numerous exhibits were at all times surrounded by groups of keen midland and northern florists who discussed points and criticised judgments with great freedom.

Mr. H. ROBERTSON, Kelty, won the leading award for two dozen fancy Pansies, on boards, with wonderful flowers, and he also had the

and he had a grand lot of clean, large blooms; second, Mr. F. DENTON; third, Mr. J. WOOD, Guiseley. Mr. H. BAIRSTOW, Bradford, excelled in the class for two dozen fancy Pansies.

Mr. F. DENTON led for four dozen Violas, distinct, with a grand lot of flowers; second, Mr. E. CLEGG; third, Mr. J. WOOD. Mr. H. BAIRSTOW won first prize for two dozen Viola blooms, and Mr. ALEX. FORREST came second. There were numerous other classes for Violas and Pansies, and in all of them the competition was unusually keen.

FLORAL DECORATIONS.

One large tent was occupied throughout its centre and end by the exhibits in the several classes for table decorations, the rest of the space being filled with Pansies and Violas.

In the open class, where competitors were allowed a free hand in regard to the kinds of flowers they used, there were eleven competitors, and the competition was keen. Messrs. R. FELTON AND SONS, Hanover Square, won the first prize with a very rich arrangement composed almost entirely of Orchids. The high centre-piece allowed a clear vision beneath it and above the base, across the table; the corner arrangements were graceful little mounds of gorgeous flowers. Messrs. FELTON AND SON made good use of *Odontiodas*, gold and purple *Laelio-Cattleyas*, *Cochlioda Noezliana*, *Oncidium Papilio* and *Gloriosa superba*. The whole effect was gorgeously rich but graceful, and there was no overcrowding of material. Miss NELLIE GIBSON, Welbeck, Worksop, won second prize, and had a fine centre-piece of *Odontiodas* and *Odontoglossums*, with purple and white *Cattleyas* at the base and at the corners: the corner arrangements were a little heavy owing to the large size of the *Cattleya* blooms; third, Mr. S. WARREN, Darwen, who had a pleasing design in yellow *Carnations*, mauve *Odontoglossums*, and sprays of *Thalictrum dipterocarpum*; fourth, Miss NEWSHAM, Ormskirk, whose flowers were single rose-red *Roses*. Messrs. FELTON AND SON were awarded the Woodhead Challenge Trophy with their fine design.

Pansies and *Violas* are not usually considered desirable subjects for dinner-table decoration, but the entries in a class provided for these flowers proved their value. Mrs. J. NIXON, Alderley Edge, led with flowers in brown baskets.

In other "open" classes Messrs. R. FELTON AND SONS were the most successful exhibitors of three bouquets, winning with an exquisitely dainty bride's bouquet of white *Cattleyas*, albino *Cypripediums*, white *Odontoglossums*, and white *Heather*; and a pair of bridesmaid's bouquets composed chiefly of magnificent mauve and purple *Cattleyas*. Second prize was won by Mr. A. ADSHEAD, Gatley, and third by Mrs. J. NIXON, Alderley Edge. The Hanover Square florists were again successful in the class for one bouquet, in which they had a charming arrangement of *Odontoglossums*, white *Cypripediums* and *Cattleyas*; second, Mr. ADSHEAD; third, Messrs. GARNER AND SON, Altrincham. Mrs. NIXON showed the best basket of cut flowers—a large design composed of *Vanda coerulea*, inflorescences of *Antirrhinum Andreanum*, *Odontoglossum* spikes, sprays of *Francoa ramosa* and *Codiaeum* leaves; second, Messrs. GARNER AND SON. Mrs. NIXON was also the winner of the first prize for a bowl of flowers (*Orchids* excluded), with a very handsome arrangement of *Gerberas* and *Codiaeum* leaves.

In the "trade excluded" section Miss NEWSHAM, Aughton, showed the best bowl of *Roses* and also the best vase of *Roses*. Mrs. COURTNEY PAGE, Enfield, using the variety *Emma Wright*, won the leading award for a table decoration entirely of *Roses*, and she had a very pleasing arrangement; Miss NEWSHAM, second, and Mrs. J. NIXON, third. The best table decoration of *Dahlias* was one composed of blooms of *Coltness Gem*, arranged tastefully by Mrs. A. J. BLAIR, Congleton; second, Mrs. NIXON; third, Mr. F. EMMOTT, Lancaster. In a class for a table decoration in which any flowers except Sweet Peas were allowed, Mr. W. SHARP, Manchester, led with a light and brilliant arrangement of *Cattleya Hardyana*, *Cypripedium Maudae*, and sprays of *Thalictrum dipterocarpum*; second, Mrs. J. NIXON, with *Gerberas* and *Cypripediums*; third, Mrs. COURTNEY PAGE, with *Roses*; fourth, Mrs. BLAIR, Congleton, with pink *Carnations* and blue *Violas*. There was a very keen competition in this class, and the exhibits reached a high order of merit.

Messrs. R. FELTON AND SONS won a splendid victory in the important class for a group of floral designs, consisting of bouquets, baskets, bowls, vases and stands of cut flowers, but including only one memorial design. The space allowed was twelve feet by six feet, and on this area, the Hanover Square firm displayed some delightful designs, which for taste, graceful arrangement, and colour, would have been hard to beat. If any criticism is offered it

can only be that perhaps there were a few too many good things, or, put another way, a little more space would have permitted all the exquisite designs, a better chance of displaying the art employed in their creation. A basket of golden *Chrysanthemums* associated with "blue" *Gladioli* was a fine feature, and the cross of white *Asters*, with graceful groupings of *Orchids* superimposed thereon, was the central attraction; the last design was eventually subscribed for by numerous exhibitors and placed on the Southport War Memorial as a token of respect and regard from those associated with the Show. Second prize fell to Messrs. CAMPBELL AND CO., Southport, who showed some capital bouquets and chaplets.

FRUIT.

The competition in the fruit classes was keener this year than in 1924, and if the authorities continue to offer attractive prizes there seems no good reason why Southport Show should not become one of the very best for exhibits of fruits.

Three competitors came forward in the class for a decorated table of dessert fruits, consisting of twenty-four dishes in not fewer than nine distinct kinds, and containing not more than a dozen bunches of *Grapes*. The first prize was the Southport Hotels Trophy value £50, and a cash sum of £30; this was won by the DUKE OF NEWCASTLE (gr. Mr. S. Barker), Clumber, Worksop, with a capital display which included Royal George and Dymond Peaches, Humboldt and Pineapple Nectarines, Cox's Orange Pippin and Ribston Pippin Apples, *Marguerite Marillat* and *Triomphe de Vienne* Pears, and Black Hamburg and Muscat of Alexandria *Grapes*; the total points obtained were 184½; second, Mr. J. MCCARTNEY, Kingston Hall, Derby, with 177½ points; third, Mrs. T. S. HALL, Cricket St. Thomas, Chard, with 163 points.

The best collection of twelve bunches of *Grapes* was the one shown by Mr. S. GORDON, Monreith Gardens, Whauphill, Wigtownshire; the exhibit consisted of large, well-berried clusters of Black Hamburg (4), Alnwick Seedling (3), Prince of Wales (1), Madrestfield Court (1), Muscat of Alexandria (2), Golden Hamburg (1); total points, 99 out of a possible 114; second, the PWLL-Y-CROCHAN HOTEL, LTD., Colwyn Bay, with 94 points out of a possible 120; third, the DUKE OF NEWCASTLE, with 87 points.

The DUKE OF NEWCASTLE excelled for yellow Plums, red Plums, and for Peaches.

The fruiterer's class for a decorated table of fruit was interesting, and Mr. M. HUBBARD, Southport, was an easy first prize winner with a fine collection in which Elberta Peaches, Pineapples, Plums, Canteloup Melons, Apples and Pears, were the principal subjects; second, Mr. T. MAWDSLEY, Southport.

VEGETABLES.

Some capital vegetables were staged in the numerous open classes and those provided by seedsmen, but, taken as a whole, the vegetables did not reach the high average we should like to see in such an important show; nor did the competitors appear to take the extreme pains which used to characterise the exhibits when such successful growers as Messrs. Beckett, Gibson, Foster and others were frequent competitors.

In the open class for twelve kinds, Mr. W. ROBINSON, Forten, Garstang, won the first prize and Gold Medal with a good exhibit, in which Leeks, Onions, and Runner Beans were of fine quality; second, MAJOR PILKINGTON (gr. Mr. M. L. Wood), Crank, St. Helen; third, Mr. HUGH BRADE, Southport, with a rather rough exhibit.

Mr. H. PORTER, Gregory Lane, Halsall, had the best collection of a dozen varieties of Potatoes immune from Wart disease, showing grand specimens of Di Vernon, Arran Comrade, Great Scot, The Bishop, Arran Victory, Majestic, Rhoderic Dhu, Mr. Bresee, Climax, and an

unnamed variety with coloured eyes; second, Mr. ALTY; third, Mr. H. SWARBRUCK.

Mr. E. ALTY, Ormskirk, led for a collection of three varieties of Potatoes, with splendid tubers of Majestic, The Bishop, and Mr. Bresee; he also had the finest Cauliflowers. Mr. W. ROBINSON led in the classes for autumn-sown and for spring-sown Onions with grand bulbs. Mr. ALTY also had the best collection of immune Potatoes in a local district class.

In the seedsmen's classes Dr. J. ROY, Cheadle, won Messrs. J. Carter and Co.'s first prize; in Mr. J. Clucas's class, Dr. E. JACKSON, Carnforth, led; Mr. W. ROBINSON scored in Messrs. Clibran's class; Mr. J. STUNAKER, Lancaster, gained first prize in Messrs. Dickson and Robinson's class; Major PILKINGTON led in Messrs. Sutton and Son's class; Mr. ROBINSON was successful in Messrs. Toogood and Son's class; and Mr. F. EMMOTT excelled in the class provided by Messrs. E. Webb and Sons.

NON-COMPETITIVE.

Over fifty non-competitive displays, in addition to the various exhibits grouped under the general title of "Sundries," plus seven exhibits put up by various newspapers—including *The Gardeners' Chronicle* kiosk—were sufficient in themselves to provide a large, beautiful, and interesting show, and gave ample proof of the high value the exhibitors place on Southport Show as a business and publicity centre. Limits of space do not permit a description of more than one or two of these fine contributions.

Of outstanding merit was the collection of 200 dishes of vegetables shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree (Fig. 70), which was the great centre of attraction. The various kinds and varieties, from Messrs. J. Carter and Co.'s seeds, were arranged with the greatest skill and taste, while from the cultural point of view, every item was of the highest order. This grand display was awarded the Special Trophy offered for the best non-competitive exhibit in the show, the Gold Medal of the R.H.S., and *The Gardeners' Chronicle* Medal. Messrs. SUTTON AND SONS contributed a large group of annuals, *Montbretias*, and *Gladioli*, and Messrs. J. CARTER AND CO., showed *Asters*, *Begonias*, *Gloxinias*, *Gilias* and other good things, all arranged on a ground space.

The fine exhibits of fruit trees in pots from Messrs. T. RIVERS AND SONS, and from Messrs. G. BUNYARD AND CO., demonstrated the well-known capabilities of these firms in the production of fine trees and fine fruits; the Plums from Sawbridgeworth, and the Apples from Maidstone were splendid. Mr. W. J. UNWIN's display of *Gladioli* was one of the best we have seen. The spikes were of fine quality and the arrangement artistic. Messrs. ALLWOOD BROS. exhibited a goodly lot of *Carnations* and *Dianthus*; Messrs. ALEX. DICKSON AND SONS contributed a particularly elegant exhibit of *Roses* and Sweet Peas; Messrs. DICKSON AND ROBINSON had fine flowers and vegetables in fine condition, and the NATIONAL INSTITUTE OF AGRICULTURAL BOTANY made an educational and valuable contribution of fifty dishes of Potatoes, representing varieties immune from Wart disease. The various awards made to the non-competitive exhibits are appended.

ROYAL HORTICULTURAL SOCIETY'S AWARDS.

The following is a list of the awards made by the deputation from the Royal Horticultural Society:—

Gold Medals.—To the Hon. VICARY GIBBS (gr. Mr. E. Beckett, V.M.H.), Aldenham House, Elstree, for vegetables; to Mr. W. J. UNWIN, Histon, for *Primulinus Gladioli*; to Messrs. S. MCGREDY AND SON, Portadown, for *Roses*; to Messrs. JAS. CYPHER AND SONS, Cheltenham, for a group of flowering and foliage plants; to Messrs. ALEX. DICKSON AND SONS, Newtownards, for *Roses* and Sweet Peas; to Mr. H. WOOLMAN, Shirley, for *Dahlias*; to Messrs. MAURICE PRICHARD AND SONS, Christchurch, for a group of hardy flowers; and to Messrs. HAYES AND SON, Keswick, for a rock garden.

Silver-Gilt Flora Medals.—To Messrs. SUTTON AND SONS, Reading, for Montbretias, Annuals, etc.; to Messrs. DOBBIE AND CO., for Sweet Peas; to Messrs. BEES, LTD., for Roses; to Messrs. J. AND A. McBEAN, Cooksbridge, for Orchids; to Mr. H. J. JONES, Lewisham, for Phloxes and Gladioli; to Messrs. BLACKMORE AND LANGDON, Bath, for Begonias; to Mr. C. ENGELMANN, Saffron Walden, for Carnations; and to Mr. W. HOLMES, Chesterfield, for a group of plants.

Silver Gilt Hogg Medals.—To Messrs. G. BUNYARD AND CO., Maidstone, for fruit trees in pots; and to Messrs. T. RIVERS AND SONS, Sawbridgeworth, for fruit trees in pots.

Silver Flora Medals.—To Messrs. ISAAC HOUSE AND SON, Bristol, for Scabious; to Messrs. J. VERT AND SONS, Saffron Walden, for Hollyhocks; to Messrs. HERD BROS., for Sweet Peas; to Messrs. J. FORBES AND SON, Hawick, for Pentstemons, etc.; to Messrs. JAS. CARTER AND CO., Raynes Park, for Asters, Gilias, Gloxinias, etc.; to Messrs. WILSON AND AGAR, for Gladioli; to Messrs. W. H. SIMPSON AND SONS, Birmingham, for Antirrhinums; to Messrs. ALLWOOD BROS., Haywards Heath, for Carnations; and to Messrs. DICKSON AND ROBINSON, Manchester, for Gladioli and Chrysanthemums.

Silver Hogg Medal.—To Mr. S. GORDON, Monreith Gardens, Wigtonshire, for Grapes.

Silver Knightian Medals.—To Messrs. E. WEBB AND SONS, for vegetables; and to Messrs. DOBBIE AND CO., Edinburgh, for Potatoes.

MEDAL AWARDS TO NON-COMPETITIVE EXHIBITS.

Large Gold Medals.—To Messrs. ALLWOOD BROS., Haywards Heath, for Carnations; to the Hon. VICARY GIBBS, Aldenham House, Elstree, for vegetables; to Messrs. DICKSON AND ROBINSON, Manchester, for flowers, fruit and vegetables; to Messrs. DOBBIE AND CO., for Roses, Dahlias, Sweet Peas and Potatoes; to Messrs. ALEX. DICKSON AND SONS, Newtownards, for Roses and Sweet Peas; to Messrs. T. R. HAYES AND SONS, Keswick, for a Heath garden; to Messrs. ISAAC HOUSE AND SON, Westbury-on-Trym, for perennial Scabious; to Mr. H. J. JONES, Lewisham, for Phloxes and Gladioli; to Messrs. JOHN PEED AND SON, West Norwood, for greenhouse flowering and foliage plants; to Messrs. T. RIVERS AND SON, Sawbridgeworth, for fruit trees in pots; to Messrs. SUTTON AND SONS, Reading, for Seedling Dahlias, Montbretias, Gladioli, and annuals; to Mr. W. J. UNWIN, Histon, Cambs., for Primulinus Gladioli.

Gold Medals.—To Messrs. BLACKMORE AND LANGDON, for Begonias; to Messrs. G. BUNYARD AND CO., for fruit trees in pots; to Messrs. JAS. CARTER AND CO., for florist's flowers; to Messrs. DANIELS BROS., for Roses and Gladioli; to Mr. AMOS PERRY, Enfield, for Lily pool and hardy flowers; to Mr. K. THERKILDSEN, Kew, Southport, for a formal garden; to Messrs. TOOGOOD AND SONS, Southampton, for flowers and vegetables; to Messrs. JAS. VERT AND SONS, Saffron Walden, for double Hollyhocks; to Messrs. E. WEBB AND SONS, Wordsley, Stourbridge, for flowers and vegetables; and to Messrs. WILSON AND AGAR, Twyford, Bury, for Gladioli.

Silver-Gilt Medals.—To Messrs. W. ARTINDALE AND SON, Sheffield for Gladioli; to Mr. THOMAS CARLILE, Twyford, for Delphiniums; to Mr. H. CLARK, Taunton, for Pelargoniums, etc.; to Messrs. J. FORBES, Hawick, for Phloxes, Pentstemons, Violas, and other hardy flowers; to Messrs. HEWITT AND CO., Solihull, for Dahlias; to Messrs. P. JOHNSON AND SON, Birkdale, for alpine plants; to Messrs. L. R. RUSSELL, LTD., Richmond, Surrey, for Clematis; to Messrs. W. H. SIMPSON AND SONS, Birmingham, for Antirrhinums.

Silver Medals.—To Messrs. BAKERS, Wolverhampton, for hardy flowers; to Messrs. W. BROWN AND SON, for shrubs and climbers; to Messrs. R. H. BATH, Wisbech, for Gladioli; to Mr. R. CALDWELL, Southport, for succulents and Cacti; to The CHALK HILL NURSERIES, Reading, for hardy flowers; to Messrs. E. F. FAIRBAIRN AND SON, Carlisle, for Phloxes and Dahlias;

to GARDEN SUPPLIES, LTD., Liverpool (two), for Sweet Peas, Gladioli and Roses, and for vegetables; to Mr. P. GARDNER, Addingham, Ilkley, for formal garden and miniature tennis courts; to Miss BEATRICE M. GOFFEY, Heskett Road, Southport (two), for two miniature rock gardens; to Mr. JOHN JONES, Wem, for Scabious and Pansies; to Messrs. JONES BROS., Bromborough, for hardy flowers; to LIVERPOOL SEED AND BULB CO., Liverpool, for Gladioli, etc.; to Messrs. MIDDLEHURST, LTD., Liverpool, for Gladioli and vegetables; to the Exors. of Mr. ROBERT MANSON, Gateacre, for Roses; to Messrs. MAXWELL AND BEALE, Broadstone, for a rock garden; to NATIONAL INSTITUTE OF AGRICULTURAL BOTANY, Ormskirk, for exhibit of Potatoes immune from Wart disease; to Mr. J. EDWARD PARSONS, Worcester, for hardy fruits; to Messrs. RICH AND CO., Bath, for Phloxes; to Mr. E. J. RIGG, Kew Nurseries, Southport, for alpine plants and shrubs; to Messrs. REAMS-BOTTOM AND CO., West Drayton, for St. Brigid Anemones; to Mr. B. A. RHODES, Southport, for Ferns and Pelargoniums; to Mr. J. SKERRATT, Burton-on-Trent, for floral designs; to Mr. H. WOOLMAN, Shirley, Birmingham, for early Chrysanthemums; and to Mr. F. G. WOOD, Ashted, Surrey, for alpine plants and miniature rock garden.

GLADIOLUS SHOW AT WESTMINSTER.

THE second special Gladiolus show which was held at the R.H.S. Hall, Westminster, on August 25 last, was responsible for many beautiful exhibits, which created an amount of interest which must have been gratifying to the promoters of the show.

As is often the case with special flower shows, while the exhibits were fairly numerous the actual exhibitors were comparatively few, but the general quality of the exhibits was quite good.

In the two open classes, the first prizes were awarded to continental exhibitors. For a collection of large-flowered varieties Messrs. J. J. GRULLEMANS AND SON were the fortunate exhibitors, though the general visitors were more impressed with the splendid spikes of the second prize collection of Messrs. GEORGE MAIR AND SON, who included Dryad, rose; Peach Blossom; Duchess of York, rose and puce, with a white centre; and Apricot of salmon-apricot shades. The first prize collection included War, Golden Measure, Carmen, and Youell's Favourite.

The first prize for a collection of Primulinus varieties was awarded to Messrs. K. VELTHUYS AND CO., for a well-arranged collection. The outstanding varieties were Salmonea, Maiden's Blush, Alice Tiplady, Hermoine, and Scarletta. Messrs. LOWE AND GIBSON, who were second, showed a large number of excellent sorts.

In the classes restricted to growers in the British Isles, Messrs. GEORGE MAIR AND SONS won three of the four first prizes in one section with especially good Gladioli. Their six varieties included Apricot, King George, Queen Mary, and Jean Mair, carmine with white blotch, while their three first-prize reds, were Jas. Dunlop, King George, and Gloriosa, three handsome spikes but all have white blotches on the lower petals. Their three varieties, other than red and white, were Apricot, Carrick, slaty-brown, and Lovely, cherry-rose with white blotch. The best three white varieties were shown by Messrs. LOWE AND GIBSON, who included Snow Glory and Mary Pickford, of great merit.

In Section III the class for six varieties of large-flowered Gladioli was very well contested and the first prize was won by Messrs. D. PRIOR AND SON, who had splendid spikes of L'Innocence, and Twilight in their exhibit. Mr. O. E. AMOS, Colchester, was a good second, in this large class.

The best red variety was Red Emperor, shown by Mr. H. VERCEST, Islington. Mr. A. E. AMOS was first with Lily White, Baron Hulot, blue, and My Favourite, in the class for any other colour.

In the classes for Primulinus varieties, two first prizes were won by Mr. W. YANDELL with particularly graceful spikes. Alice Tiplady.

Souvenir and Prince of Orange, were especially good. The best six spikes were shown by Messrs. LOWE AND GIBSON, who had lovely spikes of Alice Tiplady, and Midsummer Dream.

There were two classes for Seedlings in which the R.H.S. offered medal awards. The best large-flowered seedling was Rosella Amos, a magnificent spike of purplish puce shading on creamy-white ground; the cream ground was clear in the heart of the flowers, and also as a narrow central bar along each petal. This, the outstanding novelty of the show, was exhibited by Messrs. GEORGE MAIR AND SONS, who also staged Alice Amos, glowing rosy-scarlet, with a creamy-yellow throat, and Solly Joel, large, pale, self-pink. The medal for the best Primulinus seedling was awarded to Mr. A. J. BLISS, Tavistock, who showed several lovely seedlings.

Mrs. W. YANDELL won the first prize in the decorative class with an artistic bowl of Primulinus Gladioli. Mrs. WATERWORTH, Lindfield, was second.

MORAYSHIRE FIELD CLUB.

FAVOURER with delightful weather, the members of this Club had an excursion to Craigellachie—one of the most beautiful and picturesque countrysides in Scotland—on the 22nd ult. The outing proved one of the best and most interesting in the history of the Club, as many rare and interesting plants are to be obtained in the neighbourhood of Craigellachie. On leaving the station, on the banks of the railway were Hieracium corymbosum, the corymbosa Hawkweed—far from common in Morayshire, but found in great profusion in certain parts of Darnaway Forest. In one little nook near the far-famed rock of Craigellachie were found two superb little Ferns—the common Spleenwort and the Black Spleenwort, the Burnet Saxifrage, never found before by a member of the Club in Morayshire, the hairy Rock Cress, the hairy St. John's Wort, the Golden Rod, the Wood Meadow Grass, and the Wild Basil Thyme. Near the Rock was also found the Agrimony (Agrimonia Eupatoria) recently discovered by members at Cothall, on the banks of the river Findhorn. Walking to the beach of the river (the Spey), below the bridge, members found the Mountain Bedstraw, the Alpine Lady's Mantle, the Melancholy Marsh Plume Thistle, and the Bearded Wheat Grass. The fine afternoon, the beauty and charm of the surroundings, and the rarity and delight to the senses of the plants found, made the excursion one of the most successful, most profitable and enjoyable ever held by the Club.

ROYAL HORTICULTURAL.

Trial of Sweet Peas.

THE following awards have been made to Sweet Peas by the Royal Horticultural Society after trial at Wisley.

AWARD OF MERIT.

Royal Salute.—Sent by Messrs. E. W. KING AND CO., Coggeshall.

HIGHLY COMMENDED.

Mauve Beauty.—Sent by Mr. W. J. UNWIN, Histon.

TRADE NOTE.

THE Annual Meeting of Messrs. Ryder and Son (1920) Ltd., was held on the 19th August at 14, George Street, E.C. 4. This well known St. Albans seed firm has had a good year's trading, though the results were less favourable than they had been in the preceding year, chiefly owing to wet and inclement weather during the winter and spring. Another factor was the increase in the price of bulbs, and the difficulty which was experienced in obtaining sufficient numbers of a high quality. A dividend of 12½ per cent. for the year was declared, and a vote of thanks to the Chairman, Mr. Samuel Ryder, concluded the meeting.

Obituary.

Mrs. W. J. Bean.—The many old Kewites and other friends of the Curator of the Royal Botanic Gardens, Kew, will deeply sympathise with him in his sad bereavement. Mrs. Bean died after a long and somewhat distressing illness, and was buried at Richmond Cemetery on August 27 last. As many as possible of the Kew staff were present. The service, which was held at the Parish Church, Kew Green, was largely attended.

Whitpaine Nutting.—We deeply regret to announce the death of Mr. Whitpaine Nutting, a director of the firm of Messrs. Nutting and Sons, Ltd., Wholesale Seedsmen, 106, Southwark Street, London. He had been unwell for some time, but had gone to the country for a period of convalescence when a relapse occurred, and death took place suddenly on the 29th ult., at the age of sixty-nine years. The deceased was a grandson of the founder of the firm, and son of the late William James Nutting, and had been connected with the seed trade all his life, entering the firm in the year 1872. He was well known and highly esteemed by a wide circle of friends in the trade, and until quite recently, made it a practice to personally visit as many of them as possible during the summer and autumn months. He had a very deep knowledge of the seed trade, and took an active part in many of the societies promoted for the furtherance of its welfare. He was a Fellow of the Royal Horticultural Society, Vice-President of the Sweet Pea Society, a member of the Chamber of Horticulture, a member of the Executive Council of the Horticultural Trades Association, and a Past Master of the Hortus Lodge of Freemasons. He was also closely interested in the charitable institutions connected with horticulture, being for many years a generous subscriber to the Royal Gardeners' Orphan Fund, of which he was a member of the governing body, and the Gardeners' Royal Benevolent Institution.

ANSWERS TO CORRESPONDENTS.

APPLE SHOOTS MILDEWED.—*E. J., Hull.* The Apple shoots you send are affected by Apple mildew, caused by the fungus *Podosphaera leucotricha*. The whitened tips of the shoots should be cut off now and again in the spring so soon as the fruits have set. Lime-sulphur solution used at a strength of one gallon of the concentrate to fifty-nine gallons of water should be applied to the tree.

CUCUMBERS DAMPING OFF. *G. P.* The damping off of the young fruits of your Cucumbers is due to the root action being insufficient to support the strain of bearing heavy foliage and fruit. The factors causing the trouble occur in the lower portion of the beds. Before planting a new crop, you should remove the old hot-bed and substitute fresh compost consisting of two-parts of loam to one part of stable manure.

GESNERIA DISEASED. *W. C. M.* The leaves of Gesneria which you sent are attacked by a bacterial disease which caused the dark blotches so obvious when the leaves are held up to the light. Without being able to examine a complete plant it is impossible to say if the disease has been contracted from the soil or from the air, but from the appearance of the lesions we are inclined to suspect the former. If the plants are infected from the roots upwards nothing will save them, and the only possibility of affecting a cure is by suitable applications of sulphate of potash. If the disease has been contracted from the air, you should be able to stop it by cutting back the diseased leaves to healthy parts of the plants.

LABURNUM ADAMII. *J. K. E.* We are not aware of any carefully made experiments being carried out in connection with the raising of seedling plants of *Laburnum Adamii*. We know of several instances of trees raised from seeds picked from trees of *L. Adamii* producing typical *Laburnum* flowers, but these seeds were most probably off branches of the common *Laburnum*, as this part produces seeds the most readily. Obviously, to obtain any interesting results, the seeds must be produced by flowers of the actual hybrid. Scientists interested in this particular hybrid are experimenting in the direction indicated, but several years must elapse ere definite results can be obtained.

NAMES OF PLANTS. *M. N.* 1, *Salvia* species; 2, decayed; 3, *Polygonum campanulatum*; 4, *P. amplexicaule*. *H. C. R.* *Tigridia Pavonia*. *W. S.* *Mecanopsis Wallichii*. *F. C.* *Atriplex hortensis*, an annual species which is sometimes used as a substitute for Spinach, the leaves being gathered when young. The variety *A. h. atrosanguinea* is a pretty form with handsome crimson leaves, and grows to a height of about four feet. It is well worth growing with such plants as *Amaranthus*.

NECTARINES UNSATISFACTORY.—*G. W.* The fruits were bruised in transit, and the "blue-green mould" (*Penicillium glaucum*) was growing on these places. This fungus was not the primary cause of the trouble for the leaves are unhealthy and infested with red spider. We are of the opinion that the cause of the disease is due to wrong cultural conditions. An insecticide should be used to destroy the red spider.

ROSES AT THE YORKSHIRE SHOW. Messrs. Samuel McGredy and Son inform us that they received the chief award for Roses at the Yorkshire Show, and that Mr. J. Robinson, whom our reporter stated gained the first prize (p. 119) was placed second.

TIGRIDIAS. *J. P. O. D.* *Tigridias* are half-hardy, bulbous plants which thrive best when planted in a narrow border fairly close to a wall and with a southern aspect. They like a rich, sandy loam and if left in the open ground should be protected from frost and wet, but it is better to lift the corms in late autumn and keep them in a dry, cool place until planting-out time, early in April. The flower is very fugitive, lasting only for a day. Healthy plants usually grow about eighteen inches high.

VARIOUS PLANTS DISEASED. *J. T. W.* The specimens of Cucumber, Melon and Aster which you sent arrived in a very bad condition, and when sending future specimens you should pack them properly in tin boxes. The Aster is suffering from root-rot caused by a species of *Fusarium*. Hot, dry weather is extremely favourable to this disease. The remains of the Cucumber and Melon give signs that the physical condition of the beds in which they were grown was unsuitable for vigorous growth. These plants require a rich, moist bed through which the air diffuses easily. So soon as the soil is allowed to get too wet the air is driven out and the plants suffer.

YOUNG VINE UNHEALTHY. *W. McC.* The portion of vine rod which you send shows brown lesions infected by a bacillus. Your best plan will be to cut back the rod to healthy wood, and burn the diseased portion which you have removed.

GARDENING APPOINTMENTS.

Mr. David Milne. for the past three years gardener to EDWARD BALFOUR, Esq., at Balbirnie, as gardener to Sir HERBERT OGILVY, Bart., at Baldovan House, Dundee.

Mr. Lewis Chilvers. for the past sixteen years gardener to the late Miss NEVE, Osborne Lodge, Cranbrook, Kent, and previously in the gardens at Warley Place and Dropmore, as gardener to W. WEST NEVE, Esq., West Court, Bray-on-Thames, Berks. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

MARKETS.

COVENT GARDEN, Tuesday, September 1st, 1925.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English—		Melons (Forced)	
—Lady Sudeley	3 0—6 0	basket	15 0—18 0
—Miller's Seedling	2 0—4 0	—Cantaloupes	3 0—8 0
—Worcesters	3 0—7 0	—Valencia, per	
Apples, Cooking—		case	14 0—15 0
—large	5 0—7 0	Nectarines, per	
—others	2 0—3 0	doz.	6 0—18 0
Bananas	14 0—22 6	—South African,	
Blackberries—		per case	20 0 25 0
—cultivated, per lb.	0 0—0 8	Oranges, South African—	
—wild, per lb.	0 3—0 4	—Naatges per tray	3 0—3 6
Cobnuts, per lb.	11—1 0	—Naval	18 0—24 0
Gages, Spanish		—Seedless	18 0—22 0
—sieve	14 0—21 0	Peaches, English	
Grapes—		per doz.	6 0—24 0
—Belgian, Alic	1 0—1 6	Pears, Williams'	
—English	1 3—2 0	bon Chretien,	
—Colmar	1 9—3 0	—48's	3 0—6 0
—Hamburgh, lb.	1 3—1 9	—crates	12 0—16 0
—Muscat	2 6—5 0	California—	
—Canon Hall	2 6—5 0	—Bartlett	25 0—30 0
Grape Fruit,		—Beurre Hardy	30 0—35 0
—South African,		Plums, English	
per case	30 0—34 0	—Monarch	12 0—14 0
Lemons, Messina,		—Pond's Seedling	8 0—12 0
per box	12 0—18 0	—Victoria	10 0—12 0
—Murcia	12 0—16 0	—Damsons	10 0—12 0
—Naples	12 0—22 6	—Black Diamond	8 0—10 0

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—		Lettuce, cabbage	1 6—2 6
—Scarlet Runner,		Mushrooms, cups	2 6—3 6
bushel	3 6—4 0	—Broilers	2 0—2 6
Beets, new, per		Marrows, tally	2 0—6 6
doz. bun.	2 0—3 0	Onions—	
Cabbage, per tally	5 0—6 0	—English, per cwt.	8 0—9 0
Celery, per doz.		—Valencia	9 0—10 0
funs	21 0—24 0	Parsnips, per cwt.	4 0—6 0
Cauliflowers, per		Potatoes—	
doz.	2 0—6 0	—English, per	
Carrots, new, per		cwt.	5 0—7 6
bag	5 0—7 0	Tomatoes, English,	
Cucumbers, per doz.	4 0—5 0	per strike—	
—Flats, 36's, 42's	12 0—14 0	—pink	2 6—3 6
Dutch Onions	8 0—9 0	—pink & white	3 0—3 6
Greens, best, per		—blue	2 0—2 6
bag	1 6—2 6	—Guernsey	— 2 6
Horseradish, per		—Dutch	2 0—2 6
bundle	2 0—3 6	Turnips, per cwt.	3 6—5 0
Lettuce Cos, doz.	1 0—3 0		

REMARKS.—Some improvement in trade has been shown during the last few days and no doubt now that August is over we shall see more active conditions in the markets. Hothouse fruits, such as Grapes, Peaches, Nectarines, and Melons, have been selling very slowly. The quantities of Apples have been heavy, especially fruits of second and medium grades. At the time of writing best dessert and cooking sorts are a shade better in demand. Plums have improved slightly since the week-end: the main varieties are Monarch and Bush with a sprinkling of Victorias and Damsons. Some Swiss Plums from Central Europe are also coming to hand. Blackberries are plentiful and cheap. Many parcels of this fruit are arriving much over-ripe which can only result in a loss to the senders. The Tomato trade is moderate, with prices at a comparatively low level. Cucumbers are a fair trade and are realising fair prices. Pears are very scarce and are wanted. A few Cobnuts and Fillberts are being marketed. Mushrooms are not plentiful and their prices keep firm. Salads are a good trade with little fluctuation in prices. Green vegetables are in fair demand, quotations keeping steady. The Potato trade is quiet with signs of improvement.

GLASGOW.

IMPROVED conditions prevailed in the cut flower market during the past week, especially on Friday, when the trade demand was more active than it has been for quite a long time. The general tone was firm and prices displayed an advancing tendency. Carnations ranged from 1 6 to 2 6 per doz.; *Lilium longiflorum*, from 2 6 to 3 -; and *L. speciosum rubrum*, from 1 6 to 2 6, while special double-budded *Chrysanthemums* (yellow, pink, and bronze) made 1 3 to 1 9 for 6's, and 2 - to 3 - for 12's. Locally grown Holme's White averaged 1 6 to 2 - per dozen, and small bunches of *Polly*, *Crimson Masse*, and *Elstob Yellow*, made 4d. to 9d. *Roses* were dearer at 2 6 to 3 - for *Madame Butterfly*, *Ophelia*, and *Mdme. A. Chateau*, 1 - to 1 6 for *Richmond*, and 1 - to 2 - for *Mrs. H. Stevens*. Special blooms of *Gladioli* were worth 2d. to 3d. per spike, and small, loose stuff 1 6 to 2 - per doz. Sweet Peas made anything from 1d. to 4d. per bunch; blue *Statice*, 3d. to 4d.; *Asters*, 2d. to 7d.; *Marguerites*, 2d.; large *Stocks*, 6d. to 9d.; small, 2d. to 5d.; *Gypsophila*, 4d. to 7d.; *Smilax*, 1 3 to 1 9; *Asparagus*, small 4d. to 8d., large, 9d. to 1 3.

A good business was done in the fruit section at steady values. Plums were again in plentiful supply and met with a ready sale. *Victoria* (Scottish grown) sold from 8d. to 10d. per lb.; *Enslsh*, 6d. to 8d.; *Czar*, 4d. to 5d.; *Prince of Wales*, 5d. to 6d.; *Coe's*, 4d.; *Belle de Louvain*, 6 - to 7 - per sieve; *Pond's* seedling, 10 -; *Egg*, 2d. to 3d.; *Damocenes*, 5d., and *Prune*, 10d. Grapes were easier. English Black Hamburgh realising 1 9 to 2 - per lb.; *Scottish*, 1 4 to 1 6; *Dutch*, 1 - to 1 2, and *Scottish Muscats*, 3 6. Apple supplies were heavier; *Rev. Wilks* made 17 - per case; *Gravenstines*, 20 - to 23 -; *Wealthy* made 14 - to 16 - per cwt., and *Stirling Castle*, 16 - to 18 -. The market was also well supplied with Pears. French Williams bon Chretien were worth 16 - to 17 - per crate, and 6 - to 7 - per box; *Californian Bartletts*, 10 - to 12 - per half case; *Beurre Hardy*, 16 -; *Grape Fruit* sold at 35 - to 40 - per case; *Melons*, from 14 - to 16 -.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 57.0.

ACTUAL TEMPERATURE—

The *Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 9, 10 a.m. Bar. 29.9, temp. 56°. Weather, Raining.

Apple Storage.

A leaflet issued by the Devon County Horticultural Superintendent records the success which attended an experiment carried out by Mr. P. M. Miller at Harford, Sidmouth, on storing Apples. The experiment was on a very small scale, but the results were so striking as to justify further trials of the method. Three bushel boxes were packed each with 120 unblemished fruits of Bramley's Seedling Apple. In one box the fruit was unwrapped. In another each was wrapped with ordinary tissue paper and in the third each Apple was wrapped in a special kind of tissue paper known as American oiled wrap. The Apples were packed in boxes in October and examined at the end of February. The unwrapped Apples fared badly. Of the 120, only forty-seven had remained in perfect condition, forty-three were blemished and thirty more or less rotten. Those in tissue paper had kept better; eighty-six were perfect, twenty-four blemished and ten wholly or partly rotten. In marked contrast with these results were those obtained by wrapping with the oiled paper. In this box were 114 perfect Apples and only three blemished and three rotten. It is claimed, moreover, that the oil paper-wrapped Apples were of perfect quality and appearance distinctly

better than those from the other two boxes. The cost of wrapping worked out at about twopence per bushel. It should be said that the Apples were stored in an ordinary packing shed, and of course, if the method were used, no specially constructed fruit room or fruit trays would be required. Before, however, growers can be advised to abandon their present practice in favour of this very simple and apparently successful method, more extensive and better controlled experiments will require to be made. It needs must be known, for example, to what extent the boxes must be protected in order to prevent the fruit from damage by frost. Packed closely in boxes it is reasonable to suppose that a light covering of litter would suffice to keep out any but severe frost. Nor is the frost problem difficult of solution now-a-days. The lamps used in the radiators of motor cars kept in garages exposed to frost would doubtless suffice to prevent too low a temperature in the store, even on nights of sharp frost. Again, inasmuch as fruits are rarely all perfect, it needs to be known what happens to those which have a slight blemish. Does enclosing them in the American oiled paper check the progress of disease? Pending the carrying out of larger experiments it would be well worth the while of gardeners to experiment with the oiled paper as a means of keeping their high quality, late, dessert fruits. Covering Apples with tissue and other paper has, of course, been practised frequently, so that there is nothing new in the method; but it may be that the oiled wrap used in the experiment quoted is of a special kind—perhaps of a high degree of impermeability. The Long Ashton Experiment Station might perhaps examine into the physical properties of the paper. The fact that the Apples wrapped in it lost one pound of water (against 1½ lb. by the unwrapped) suggests that the oiled wrap is by no means impermeable to water. On the other hand it might, perhaps, be less permeable to carbon-dioxide. If so, each Apple would be surrounded by an atmosphere fairly rich in that gas: a condition which, as has been shown, tends to preserve fruit. The experiment which we have cited deserves therefore to be extended, for there is no doubt but that by cheapening the cost of production the Apple growers of this country will be able to compete more successfully with the imported Apple.

Edinburgh International Show.—The International Fruit and Flower Show held under the auspices of the Royal Caledonian Horticultural Society in the Industrial Hall, Annandale Street, Edinburgh, was opened by the Duchess of York on Wednesday last. The Show, which is a great success, covers an area of one-and-three-quarter acre, and the entries total two thousand seven hundred. The grape classes are a special feature of the exhibition, many splendid bunches being staged. The Royal Horticultural Society is lending its patronage and support to the Show by sending a deputation from Vincent Square. We hope to publish a detailed report of the exhibition in our next issue.

Diseases of Marrows.—Whilst the Vegetable Marrow is one of the easiest of all vegetables to cultivate and suffers neglect gladly, it is sometimes attacked by mildew, especially in damp seasons, such as the present. Particulars of this fungous disease are given in *Leaflet* No. 124, published by the Ministry of Agriculture. It is caused by *Erysiphe cichoracearum*, D.C., and usually appears at the end of the season when the fruiting period is almost completed. Marrow plants are also liable to be affected when damp weather follows a period of dry

heat, and the disease sometimes occurs on quite young plants. The fungus causes a white, powdery growth on the stems and leaves which spreads rapidly and may do considerable harm to the plant or even kill it outright. It is recommended to spray infected plants thoroughly with potassium sulphide (liver of sulphur) at a strength of one ounce to three gallons of soft water. Another remedy is to dust the plants when they are damp with flowers of sulphur. The cause of Marrow fruits rotting at their bases is not due to a specific fungous disease, but is usually attributed to careless watering with excessively cold water; when drops of cold water remain together on the stem rotting usually sets in at such places. Eelworm at the roots is sometimes the cause of failure with Marrows, and especially when grown under glass.

Greenwich Park.—We learn that Mr. W. J. Hepburn, who was promoted to be superintendent of Greenwich Park, in succession to Mr. R. Findlay—the present keeper of the Royal Horticultural Society's gardens at Wisley—has taken over his duties. Mr. Hepburn for some time past has been in charge of Bushey Park, and was formerly assistant-superintendent of Richmond Park. Flower gardening at Greenwich Park has lately received greatly increased attention, and the new hardy flower border, which has been much admired by many visitors, was illustrated in *The Gardeners' Chronicle* of August 29 last, and the present issue contains, on page 205, an illustration of a beautiful bed of Polyantha Roses in this South Eastern London park.

Coloured Diagrams of Plant Pests and Diseases.

—The Ministry of Agriculture is publishing a series of coloured wall diagrams of pests and diseases which attack agricultural and horticultural crops. The first four of the series embrace the Apple Blossom Weevil, Winter Moths, Apple and Pear Scab, and Silver Leaf. The diagrams are thirty inches by twenty inches, and are beautifully executed by the best four-colour process. The price unmounted is three shillings each; mounted and on rollers, five shillings each, post free. They may be obtained direct from the Ministry of Agriculture, 10, Whitehall Place, London, S.W.1.

National Sweet Pea Society's Trials.

—We are pleased to learn that Messrs. Watkins and Simpson, the well-known wholesale seedsmen, have consented to grow the Novelty Trials for the National Sweet Pea Society in the firm's trial grounds next year. Mr. Alfred Watkins has been a Vice-President of the Society since its inception, as also has Mr. J. M. Bridgeford, who is also its Honorary Treasurer, and all the members will greatly appreciate this tangible proof of their great interest. Raisers who wish to include their novelties in the trials should send twenty seeds of each to the Secretary Mr. A. C. Bartlett, 318, Kew Road, Kew, as early as possible.

Scotch Heather in America.—It is well-known that Americans, and especially those of Scotch origin, attach a sentimental value to the Scotch Heather, but according to the *Bulletin of Popular Information* issued by the Arnold Arboretum, few Americans appear to realise that the Calluna, or Scotch Heather as it is usually called, may be successfully grown in nearly all parts of the northern states and eastern Canada, where the soil is not impregnated with lime. In one or two places, states the *Bulletin*, in northern Massachusetts and in Nova Scotia the plant has become completely naturalised, and on one New England estate where it was planted only a few years ago it is spreading rapidly over large areas.

Protection of Wild Flowers.—In our issue of September 5, we noted the measures that are taken in South Africa to protect the rarer species of the native flora. A letter from a correspondent in *The Times* reminds us that in Germany the native flora is also protected, and he mentions that during a recent visit to the Black Forest he observed notices posted

up in public places of even the smallest villages prohibiting the "plucking, uprooting, or digging up" of certain native plants and flowers. It was also forbidden "to sell such flowers in the streets or market place." This timely letter concluded with the following list, with his translation of their common names. *Gentiana lutea* (yellow Gentian), *Lilium Martagon* (Turk's turban or mountain Lily), *Cypripedium calceolus* (lady's slipper), *Pulsatilla farinosa* (kitchen bells), *Aconitum Napellus* A. *Lycotomum*, *Achillea*, *Aquilegia vulgaris* (iron cap, blue and yellow), *Ilex Aquifolium* (stinging palm or holly), *Carlina acaulis* (silver thistle), *Carlina vulgaris* (gold thistle), *Typha* (all kinds) (Reed club), *Erythraea Centaurium* and *E. pulchella* (thousand golden weed), *Leucojum vernum* (large snowdrop), and *Primula farinosa* (flour primula).

Power Alcohol from Fruit.—As might have been expected, the reported policy of the Australian Government in agreeing to pay a bounty of fourpence a gallon on power alcohol produced in the Commonwealth, has led to a demand for similar assistance elsewhere. The land-owners in some parts of West Africa draw attention to the enormous quantities of Mango and Cassada fruits wasted each year. This, they claim, could be used for the purposes of making power spirit, but these large sources cannot be exploited without financial assistance.

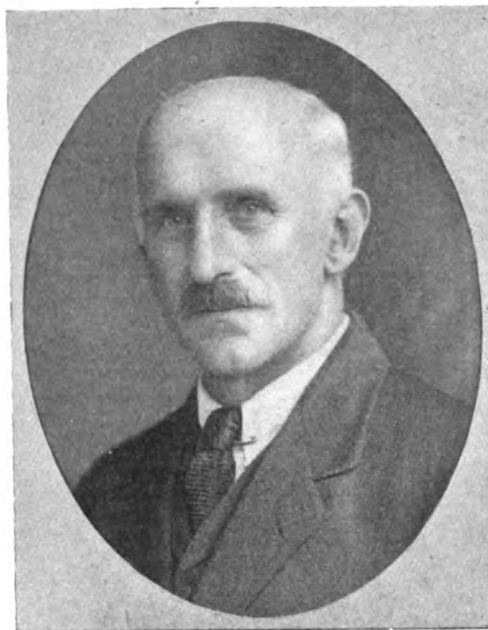
National Chrysanthemum Society's Floral Committee.—There was a small attendance of members on the occasion of the first autumn meeting of the National Chrysanthemum Society's Floral Committee at the Royal Horticultural Hall, Westminster. No novelties were forthcoming, and the only business done was the reading of minutes and the unanimous election of Mr. D. B. Crane as Chairman of the Floral Committee for the ensuing season.

New Method of Blanching Celery.—According to experiments conducted by the Minnesota Experiment Station, Celery treated with ethylene gas may be blanched perfectly in a week, and it apparently retains all the flavour and quality of a crop blanched in the usual manner with soil.

Polish Peat Resources.—It seems probable that early efforts may be made to explore the peat resources of Poland with a view to their development. The peat fields are distributed over the whole of the country, though they are most numerous in the eastern provinces. It is roughly estimated that peat bogs cover the equivalent of 9,200 square miles, or 6.15 per cent. of the total area of the country. They consist principally of low bogs of peat of medium quality, and one kilo with a heating value of 3,000 calories is equal to 12,000 calories per kilo of Polish coal of average quality. During the war, when there was a scarcity of other fuels, peat was used in considerable quantities for household purposes in certain districts, but lately its use has declined. It is suggested that electric stations burning peat could be economically established in the eastern provinces, which possess the greatest areas of peat and are situated at a considerable distance from the Polish coal basin.

Primrose Roots in Medicine.—According to the *Pharmaceutical Journal and Pharmacist* experiments are being made to isolate the primulic acid from the preparations made from the roots of *Primula veris* and *P. elatior*. The roots have been employed as an expectorant in place of Senega root or ipecacuanha root, but the patients object to the acrid taste, due to the primulic acid, in preparations made from it. It is believed that by extracting first with dilute acid and then with alkali it will be possible to produce a decoction containing the needed saponin without the acrid principle. While we have entire sympathy with any discovery or experiment likely to alleviate human suffering, if Primroses are required in quantity it is to be hoped that they will be cultivated for the purpose, and not drawn from the countryside.

Mr. Adam Knight.—Although his fame has come southward, it is in the north of England and the south of Scotland that Mr. Adam Knight is most widely known. A very capable gardener and a particularly clever plantsman he has been a most successful exhibitor during the past quarter of a century, and fully maintained the fame and interest of Brayton Gardens. Born in Lanarkshire, Mr. A. Knight served his apprenticeship at The Manse Gardens, Lesmahagow, and subsequently served at Calderhouse, Coatbridge; Kalzie, Peebleshire, the residence of Captain Black; and The Bush, near Edinburgh, the residence of Col. Trotter, where he held his first position as foreman. Later, he occupied a similar position at Riccarton, Midlothian, the residence of Sir James G. Craig, and passed on to a similar charge in the garden of W. F. Bunley, Esq., Eriech Bank, Kirm. His next appointment was to the entire charge of the glass department at Carbrook, Stirlingshire, the seat of J. C. Bolton, Esq., where the veteran gardener, Mr. Niel Glass remained in charge of the out-door department. Mr.



MR. ADAM KNIGHT.

Knight's first appointment as head-gardener was to Peter Wordie, Esq., at Lenzie, where he remained in charge for five-and-a-half years, and commenced his successes as a competitor. In July, 1903, he took charge of the late Sir Wilfrid Lawson's gardens at Brayton, Carlisle, where he still remains as gardener to the present Sir Wilfrid Lawson, Bt. One of the nicest things we have heard for a long time, and which affords ample evidence of the fine sympathy between employer and employed, is Mr. Adam Knight's observation "During my twenty-two years' service at Brayton with the late and present baronets, I have never once had an unkind word from anyone who has had anything to do with me and my work; but whether I have always deserved such generous treatment is another matter!" At the Edinburgh International Show of 1905, Mr. Knight achieved unusual success, winning many first prizes, including the premier award for a large group of plants, the Society's Gold Medal, and the Silver-Gilt Flora Medal of the Royal Horticultural Society. The reference to this group in our report of the show was "It would be difficult to say whether the plants or their arrangement was most to be admired . . . probably no better-grown plants have been placed before the British public." On dozens of occasions groups of plants have been staged from Brayton at Edinburgh and Glasgow, and on only one of these has Mr. Knight missed the first prize. At the Glasgow Centenary Show he was successful in both group classes, and was awarded the Veitch Memorial Medal

for the large group: Mr. Knight is probably the only living Scot who holds this honour. In the arrangement of flowers Mr. Knight is as skilful as in the cultivation and exhibition of plants, and he holds a fine record for successes for table decorations and bouquets, often winning in all the classes open to him at Edinburgh. In addition to the Veitch Memorial Medal, and the R.H.S. Silver-Gilt Flora Medal, Mr. Knight is the proud possessor of the Hunter Memorial Medal, two gold Medals of the Royal Caledonian Horticultural Society, and two Gold Medals won at Cralisle for table decorations. During the war, for a period of about three years, Mr. Knight undertook and carried out the supervision of the Cumberland County Council's experimental fruit plantations in the absence on active service, of Mr. W. B. Little; during the same period he also acted as correspondent on horticultural matters for the counties of Cumberland and Westmorland—a fairly strenuous business for a man no longer in his youth, and with Brayton to care for at the same time. It is a pleasure to meet and converse with Mr. Adam Knight, and a pleasure to publish a portrait and brief appreciation of this eminent gardener.

A Poor Crop of Cider Apples in France.—In normal seasons growers in certain districts in France are able to export appreciable quantities of Cider Apples, the main exporting districts being the Departments of Finistère, Morbihan, Orne and Côtes-du-Nord. From an inquiry recently undertaken by the French Ministry of Agriculture it appears that this year's crop of cider Apples is a poor one throughout France, and that the quantity available for export will be negligible.

The Scottish Raspberry Crop.—The Raspberry season in the Blairgowrie district, which is the chief producing area in Scotland, is now finished, and in respect of weight of crop, the results are much more satisfactory than was anticipated during the long spell of dry weather in June and July. With the despatch of thirty-eight tons of fruit in the last week of August the total yield for the season was brought up to 2,224 tons, which compares with 1,342 tons last year, 1,068 in 1923, and 1522 in 1922. This year's figures have not been exceeded since 1910 when the crop gave a return of 2,491 tons.

Dahlia Show in Holland.—The Royal Dutch Society for Horticulture and Botany will hold, in co-operation with the Dutch Dahlia Union, a Dahlia Exhibition from September 24 up to and including September 27, in the Club House of the Zoological Garden of Rotterdam. A fruit show will be held in conjunction with the Dahlias. The Dahlia show is intended to give a survey of the results achieved with these flowers in Holland as well as abroad.

South African Fruit Trade.—South African growers exported no fewer than 1,541,000 boxes of fruit during the past season, showing an increase on the year 1923-24 of over fifty per cent. The export of Citrus fruits is also expected to show a similar increase. It is estimated that 800,000 boxes will be shipped as against 522,000 in 1924. It is predicted that in three years' time there will be an annual output of 3,000,000 boxes of Oranges alone for sale. The handling of this enormous quantity of fruits would require 770 trains, each of thirteen trucks. The value of the exported fresh and dried fruits from the Cape last year was £459,000.

Monograph of British Aphididae.—With reference to a former announcement in our pages of the proposed issue of Professor F. V. Theobald's *Monograph of British Aphididae* we learn that the first volume is now being printed. The price is twenty-five shillings, and additional subscribers are urgently needed to meet the heavy expense incurred. The importance of a full knowledge of this wide group of injurious insects leads us to hope that the work will have a large circulation. That the book is written by Professor Theobald

is sufficient guarantee of its scientific value and accuracy. Those interested are invited to communicate with the Secretary, The Chamber of Horticulture, 18, Bedford Square, London, W.C.1.

An Old Arboretum in U.S.A.—Mr. Samuel Newman Baxter gives an interesting account of the Humphry Marshall Arboretum in *The Florists' Exchange* for August 15. We learn that the Arboretum is situated at Marshallton, a little hamlet three miles from West Chester, Pennsylvania. The homestead was built in 1773; in front of it is about one acre of land planted with trees that are said to have given the clue to early American nurserymen as to the possibility of trading in trees and shrubs. Some of the more notable specimens are *Fraxinus americana*, the American Ash, with a girth of eleven feet four inches, one foot above the ground, and towers ninety feet to one hundred feet, measuring forty feet to the first branch; *Quercus heterophylla* or Bartram Oak, fourteen feet eight inches in girth, one foot above the ground, and ten feet two inches five feet above the ground; an old Sugar Maple (*Acer saccharinum*) twelve feet ten inches and eight feet nine inches in girth one foot and five feet respectively, above ground; its buttress is eight feet six inches across; a Sweet Gum (*Liquidambar styraciflua*) sixteen feet and nine feet ten inches in circumference with a buttress eleven feet in diameter; an American Linden (*Tilia americana*), fifteen feet five inches and nine feet six inches with a nine feet buttress; a Cucumber Magnolia (*M. acuminata*), sixteen feet and ten feet ten inches in girth, its buttress being eight feet six inches in diameter. The Sycamore Maple (*Acer Pseudo-platanus*), eight feet six inches and six feet eight inches in girth; *Betula lenta*, eleven feet six inches and eight feet ten inches in girth; and a huge European Larch (*Larix europaea*) with a perfect trunk of mottled alligator bark, nine feet four inches and six feet seven inches in girth. Across the roadway on the Bradford Friends' Meeting House grounds, where Marshall is buried, are some ancient trees which may be concluded to be a part of Marshall's plantation. Humphry Marshall was the first American author on trees, he having in 1785 published a list of trees of the United States. He was born at Marshallton (formerly West Bradford) in 1722, but it was not until he was fifty-one years of age that he built the house which still stands, and started his collection of trees. His father, Abraham Marshall, was an Englishman, native of Gratton, in Derbyshire, and he settled in America about 1697. Dr. William Darlington, in his biographical sketch of Humphry Marshall, written in 1849, quotes some interesting correspondence between Marshall and Dr. Fothergill, the botanist of London, written between the years 1767 and 1774. In a letter dated March 2, 1767, Dr. Fothergill closes with the following words of wisdom which will always hold good: "Follow the example of wise men; seek their company and then thou will become such thyself, and an example to others." Although forty-five years of age upon receipt of this letter, it is evident that Marshall followed the advice, for he was a bright man considering his meagre opportunities for education.

Appointments for the ensuing week.—Monday, September 14: United Horticultural Benefit and Provident Society's Meeting. Tuesday, September 15: Winchester Horticultural Society's Meeting. Wednesday, September 16: Hove Horticultural and Allotment Society's show (two days); North of England Horticultural Society's show (three days); Cardiff and County Horticultural Society's show (two days). Thursday, September 17: National Rose Society's autumn show (two days); Royal Botanic Society's anniversary meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Gardening in Holland.*—The nursery of Van Houtte is a short distance from the town, and as time was precious, I drove, to allow as much as possible to this far-famed collection. The ground skirts the road for a good distance, the entrance being at the extremity furthest

from the town, the reason for which I could not divine. A high hedge of Hornbeam protected hundreds of Camellias and New Holland plants, and prepared me for the sight of almost a town of glass-houses. On arrival I noted the little attention that had been paid to the culture of specimen trees of hardy kinds, and the utter neglect of any attempt at what we call landscape gardening—all here was hard, mechanical, and business-like. It looked a manufactory for plants, as such, indeed, it is, and something more. I took a rapid glance over the herbaceous department, which is large, and contained some plants not usually cultured with us, especially some Composites. The *Alstroemerias* were nearly out of blossom;

before and could not be mistaken. Both hybrids have *natalensis* for one parent; but the other may have been *cardinalis* in one instance, and *florabundus* in the other; but however this may be, one thing is certain, namely, that we have no border flower a rival to *G. Brechleyensis*—it is peerless. *William Masters, Exotic Nursery, Canterbury. Gard. Chron., September 14, 1850.*

Publications Received.—*A Wheat Insurance Scheme*, by Major E. A. Ruggles-Brise, M.C., M.P., The Land Union, 15, Lower Grosvenor Place, London, S.W.1. *Income Tax Simplified*, by Arthur Fieldhouse and E. Ewart Fieldhouse: eighth edition: Simpkin, Marshall

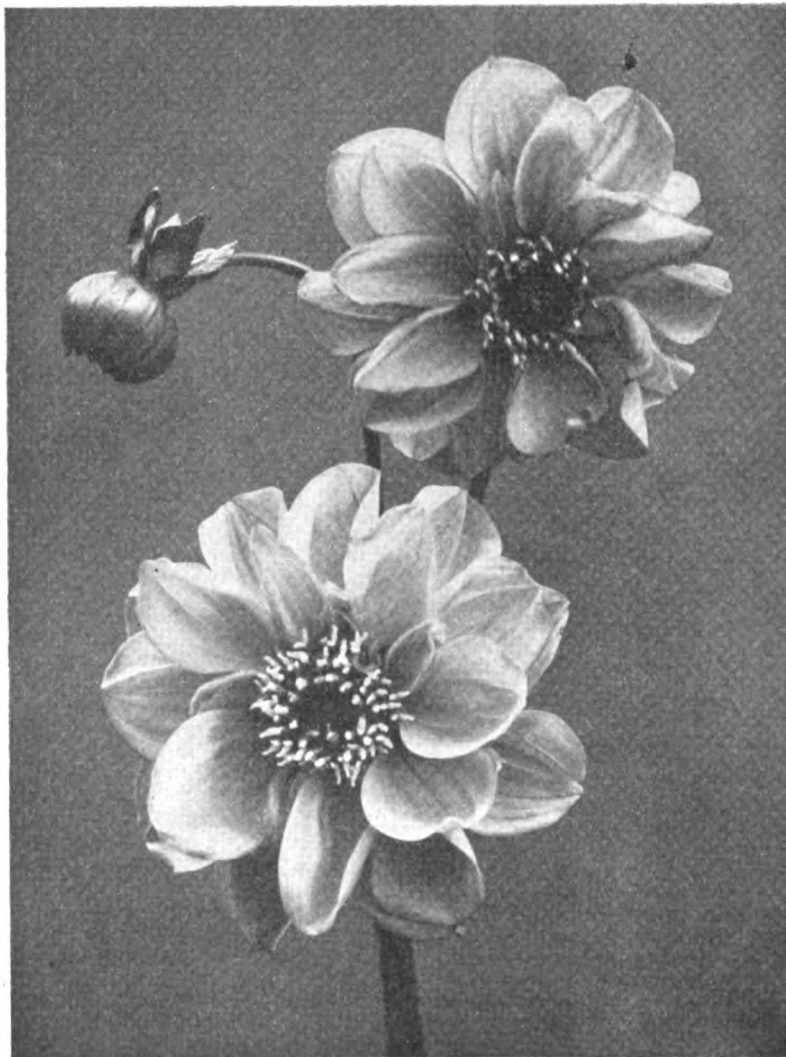


FIG. 80.—DAHLIA ST. ANDREWS.

A vivid crimson miniature Paeony-flowered variety raised by Mr. A. J. Cobb and selected for trial at Wisley (see p. 176).

they had been grown under glass, and the lights taken off as the plants had advanced. In this manner many bulbs are grown in this establishment, and some, as the *Zephyranthes alba*, that I should have thought would not have required this indulgence. I had here the opportunity of seeing beds of *Glaucidium Gandavensis* in full flower; they differ slightly from each other, as has been well given in Paxton's plate; but there was none of them at all comparable with *G. Brechleyensis*, of which some enquiries were made in the *Gardeners' Chronicle* a few months back. *G. Brechleyensis* is a far superior flower, being at once of a higher as well as more pure and transparent a colour. I had left it in blossom at home only a few days

and Co., Ltd., London, price 1/6 net. *Canada To-day*, Robert J. Arnott, M.A., The Canada Newspaper Co., Ltd., 26-27, Cockspur Street, London, price 2/6 net. *International Review of the Science and Practice of Agriculture*, April-June, 1925, Rome, Printing Office of the International Institute of Agriculture. *Your Few Acres—How to Manage them for Profitable Production*, by E. T. Brown, London, Chapman and Hall, Ltd., 11, Henrietta Street, price 10/6 net. *Fly Traps and their Operation*, U.S.A. Department of Agriculture, Farmers' Bulletin No. 734, Washington, U.S.A. *Phytophthora Rot of Pears and Apples*, reprinted from the *Journal of Agricultural Research*, Vol. XXX, No. 5, Washington, U.S.A.

The Week's Work.

THE ORCHID HOUSES

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.
Gatton Park, Reigate.

Oncidium.—Many plants of *Oncidium Papilio* and *O. Kramerianum* (known as the Butterfly Orchid) are blooming, and if allowed to do so will continue to produce fresh flowers from each stem for some time to come, but after three or four flowers have developed, the flower spikes should be removed for the future welfare of the plants or they will deteriorate and possibly dwindle away. These interesting Orchids should be grown in a light position near to the roof-glass in the Cattleya house. They are best grown in shallow pans, and afforded only a thin layer of rooting material. When these Orchids are making their growths plenty of root moisture is necessary, but after their new pseudo-bulbs are completed, they should be given just sufficient water to keep them rigid. Plants of *Oncidium varicosum Rogersii* are also producing their flower spikes, and as they become of sufficient length the inflorescences should be neatly staked, and the plants placed well up to the light. Slugs are very partial to the young, succulent spikes, and frequently appear in large numbers at this period. A good preventive is a piece of cotton wool wrapped around the base of the peduncle.

Pleione.—Such *Pleiones* as *P. maculata*, *P. praecox*, and *P. lagenaria* should now be afforded plenty of light and air, and watered at the roots each time the rooting-material becomes dry, until the foliage begins to change colour, when the compost should be kept just moist. A few weeks after the leaves have fallen, the Crocus-like flowers will appear from the bases of the newly made pseudo-bulbs. If the plants are removed to a house where the atmosphere is less humid, the blooms will remain in good condition for a much longer period. *P. humilis* will continue to grow for some weeks to come. This species, and one or two others, will flower in the spring.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Lawns.—On light dry soils, much better results are usually obtained from autumn-sown grass seed than from spring sown. Where new lawns are being made and autumn sowing is contemplated, the sites should have been thoroughly prepared some time ago so that the ground has had time to become consolidated. The seeds may be sown any time now when weather conditions enable the cultivator to work the soil into a good tilth. Rake the seeds well into the surface soil; on small areas they may be pressed in with foot boards, whilst for larger areas a light roller may be used.

Pinks.—Plants propagated from pipings in the summer should now be planted in their flowering quarters. Most of the varieties of Pinks are very effective and useful when planted as an edging to paths, but they are equally useful for planting in clumps in large borders or for filling small beds.

Schizostylis coccinea.—The so-called Kafir Lily is quite hardy, and being one of our latest flowering bulbous plants, is particularly useful for autumn display, when it also provides valuable material for cutting. It produces an abundance of shoots and its brilliant scarlet flowers remain in beauty for a considerable time. While bulb orders are under consideration, a thought may be given to it, but in planting it is wise to choose a sheltered position where it can, if necessary, be protected from heavy autumn rains, which are apt to spoil the flowers.

Planting Evergreens.—The present month is one of the best times of the year for planting many evergreen trees and shrubs. For various reasons it is frequently necessary to change the positions of Conifers and other evergreens, and where this has been decided on, the work may be undertaken at the present time with every chance of success, and, in many cases, under better working conditions than might prevail in the spring.

Weeds.—This is one of the most troublesome months of the year for weeds, and they should be kept in constant check by a vigorous use of the hoe and rake. If they are numerous, they will hardly die at this season if left on the ground: the first shower or even the moisture arising from the ground will be enough to revive them. If turned in amongst growing crops the probability is that many seeds will be buried at a sufficient depth to remain dormant until the spring when the same process of turning would bring them to the surface again to provide another quick crop. It is far better and ultimately saves much labour, to collect them and take them to the refuse heap where they can be decomposed under controlled conditions, ensuring the destruction of weed seeds and providing in return a clean, complete, and highly valuable manure suitable for any garden purpose.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Gloucestershire.

Housing of Plants.—At the time of writing these notes there are unmistakable signs of Autumn's approach, and in this district a night or two since the thermometer fell to 39°. Therefore it behoves the plantsman to make all possible preparations for the housing of tender plants before the nights become too cold for them. A general survey and overhauling of the occupants of the plant houses will be advisable at this time, with a view to making full use of all available house room when it will be required. Many plants of an annual character which have been grown for the greenhouse or conservatory, may now be dispensed with. Others of a perennial nature which have served their purpose this year, may be reduced in numbers, reserving sufficient of the younger plants for purposes of stock. Tuberous-rooted plants, such as *Caladiums*, which have put on the sear leaf, *Gloxinias*, *Begonias*, and *Achimenes* which have passed out of flower, should be gradually ripened off, by diminishing the supply of water to their roots and by exposing the plants to light and sunshine. By making use of suitable temporary positions for these and other plants, economy of space may be effected, which will render possible the entire emptying of one or two of the houses at one time, thus affording opportunity to thoroughly cleanse and disinfect them all in rotation, before introducing their intended winter occupants.

Perpetual-Flowering Carnations.—Though these plants are not likely to take harm at present, because of low night temperatures, and may even benefit by remaining in the open a week or two longer, provided the weather is fine and the nights still and dewy, nevertheless, should stormy weather prevail or threaten, it will be well to get them housed. Any of the plants from which an early supply of flowers is desired, should, however, be placed under cover without delay. At the same time attention should be paid to their requirements in the matters of tying and disbudding. The house in which the plants are placed should be well aired, leaving both the top and bottom ventilators fully open night and day for a week or so, except in stormy weather. It will be well, also, not to afford the plants any stimulants for a week or ten days after housing them.

Primula sinensis.—Late batches of plants which have not received their final potting should be potted as early in the month as possible.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Pot Figs.—It will be advisable to remove all, with the exception of the latest batch, of the pot Figs out of doors to favour the maturation and ripening the wood for next season's crop. Transfer to larger pots any plants that are pot-bound, and will not continue satisfactorily another season without repotting. Use strong, clean pots, and the following compost:—three parts of good fibrous loam, one part of old mortar rubble, one six-inch pot of bone meal and a fifteen-inch pot full of soot per barrow load. Ram the soil thoroughly, and syringe the foliage for the first weeks to prevent flagging. The roots will quickly penetrate the new compost before the fall of the leaves, and the trees be quite ready for forcing next season. The latest batch to supply fruits during November and December should be kept growing in a moist atmosphere, admitting a little air during the hottest part of the day. Permanent trees growing in borders should be given plenty of air, and rested as much as possible. Where they have made rank growths and the fruits have failed to mature properly, it will be advisable to attend to the roots, which may have escaped from the beds and grown into rank soil. Sever the large roots that may have escaped, and fill the trench with compost containing plenty of rubble, making the rooting-medium thoroughly firm. Trees carrying a late second crop should have some of the worst-placed fruit removed to encourage the others to swell. Continue to water and feed the trees until the foliage begins to turn colour, when feeding should be discontinued.

Late Melons.—Continue to hasten the development of the late crop of Melons. Scarcely any air will be required now until the fruits commence to ripen, when a small quantity of air should be admitted to the house all night to prevent atmospheric moisture condensing on the fruits and causing them to damp. Watering should be done very carefully and early in the morning. Keep the water-pipes warm both night and day. Do not attempt to grow the late fruits to a large size, or the flavour will be greatly lacking, and perfect finishing almost impossible. Keep the temperature near to 70° at night, and 75° to 80° during the day.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

The Fruit Room.—The woodwork, including the staging, should be cleansed thoroughly with strong soft soap water, and the ceiling and walls coated with whitewash or freshly slaked lime. If the floor is paved with bricks or cement it should be scrubbed and the whole room made sweet and clean in preparation for storing the fruit. If the floor is made of hard material it is advisable to cover it with a layer of clean straw to prevent the fruits from being bruised should they fall during the storing process. From now onwards, Apples will need daily attention; some of the early and mid-season varieties will need examining, including the following dessert sorts:—Ellison's Orange, James Grieve, St. Edmund's Pippin, Washington, Domino, Ecklinville Seedling, Frogmore Prolific, Keswick Codlin, Lord Grosvenor and other codlins; Pott's Seedling, Rev. W. Wilks, Sterling Castle, and other early culinary varieties. The gathering of Apples requires care and judgment; they should not be forced from the branches. When an Apple is ready for picking, if it is lifted a little to the reverse way it has grown it will leave the branch readily without much pulling. No hard and fast rule can be laid down as to when to gather Apples because the seasons vary; for instance, this year many varieties are more forward than last season. Collect the Apples carefully in a wooden crate made especially for the purpose, take them to the fruit room, and place them at once on the shelves, examining each fruit to see that it is not defective. Grad-

ing the fruit can be done easily at gathering time. As a rule there is none too much space in fruit rooms for extra work at the time of gathering.

Pears.—The early varieties, such as William's bon Chrétien, Beurré de Amanlis, Dr. Jules Guyot, Fertility, Madame Treyve, Triomphe de Vienne, and Souvenir de Congres, will need watching closely, as they ripen very quickly. The fruits should be gathered from the trees a few days before they are ripe, laid in boxes on wood wool, or any other soft material, and put in a store with a fairly even and rather low temperature.

Bush Fruits.—Red and White Currants should have the side shoots shortened to four or five buds from the base, and if the growth is too thick, take out sufficient branches from the centre to admit plenty of light and air to ripen the wood and buds. This treatment applies to gridiron trained bushes and cordons. Gooseberries should receive similar treatment, with

rabbits if necessary, as these rodents always attack this crop when they enter the kitchen garden. The beds of Cabbages from which the heads have been cut last spring, and from which the sprouts are being cut, should be cleared off now and the ground trenched on the first available opportunity.

Mushrooms.—Collect all horse manure that can be obtained, shaking out the longest straw, and place it in an open shed, where the manure can be turned for a few days, until the quantity required to make a bed has been thoroughly sweetened. When the heat of fermentation has become steady, the manure should be made into a bed in the Mushroom house to a depth of about fifteen inches, making the bed thoroughly firm with a rammer. Test the temperature of the bed by plunging a thermometer in it, and when it has dropped to between 75° and 80° it may then be spawned. Choose reliable spawn, breaking it into pieces about the size of a hen's egg, and plant them about two inches

stop in time to allow a nice bottom grass to form. This will help to keep the lawn in good condition in the winter, and to some extent, prevents moss growing.

Frost.—After this date night temperatures become low and uncertain, and slight frosts will be registered in many northern gardens. The plants in many of the flower beds which are now at their best may be saved if the beds are not too large by affording them some slight overhead protection. Where the beds are overlooked by windows of the residence if the plants are saved for a few weeks longer they will be much appreciated.

Potatoes.—The Potato crop in the north, with the exception of the early varieties, is one of clean tubers. When the tubers are ripe, the quicker they are lifted the better. Should disease be noted when lifting, great care must be observed when sorting the tubers that these are not overlooked. The haulm from diseased plants should be destroyed at once



FIG 81.—POLYANTHA ROSES AS USED IN GREENWICH PARK FOR SUMMER BEDDING (see p. 206).

the exception of those of bush form, in which case it will be necessary to retain some of the young wood to take the place of some of the older shoots. After the work is completed, the ground should be cleaned and dug over, as it is sure to have been trodden down very hard by those gathering the fruit. Black Currants should be examined for reversion. Cut away the old wood, leaving all the strong, upright growths, but not so thickly as to cause crowding. Keep the bush as shapely as possible. I do not advise much digging between or very close to Black Currants as the roots grow close to the surface.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Cabbage.—A good bed of Cabbage plants should now be planted in a well-prepared plot and more plants put in on a warm border, if the latter is available, to make sure of having a succession of heads to cut in the early spring. Spring Cabbage is a most important crop, and getting the plants well-established before the cold weather sets in is necessary to ensure success. Afford the plants protection from

deep and about nine inches apart. The bed should be made perfectly level before putting one-and-a-half inches of sifted loam on the surface. Maintain an even temperature of about 55° in the house, and never allow the atmosphere to become excessively dry.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Calceolarias.—The present week and during the next fortnight is the best time to propagate bedding varieties of Calceolarias. Choose good basal growths for cuttings, and insert them in a fairly light compost in a cool pit or frame. The cuttings will require to be kept fairly close until they are callused, by placing the lights over the frames. Shade the cuttings from bright sun until roots have formed. Afterwards admit plenty of air and give the plants full exposure to sunlight in favourable weather.

Lawns.—From now onwards lawns should be given frequent hard sweepings and rolled thoroughly afterwards. Do not continue to cut the grass too late in the season, rather

by burning. The ground left vacant after this crop has been lifted may yet, if thought necessary, be cropped again, and it is not too late to plant Kale or Coleworts. These if lifted from the beds with care, planted in dull weather and well-watered after planting, will suffer but little check.

Onions.—Both the out-door sown and spring transplanted Onions should now be harvested. In northern gardens, owing to the heavy autumn dews, they should be placed under cover. A long, open shed is a suitable place in which to complete the ripening of the bulbs. Careful sorting, as with Potatoes, is necessary, separating all defective and other unsuitable bulbs before storing the sound ones.

Lettuces.—Young Lettuces that were recently thinned or transplanted are growing freely. Work the hoe between the lines regularly in order to keep down weeds and open the soil.

Mustard and Cress.—Sowings of these salads made after this date will require rather warmer quarters. If sown indoors, give attention to the freshness of the soil. A small quantity of wood ash mixed with the soil will be very beneficial to this crop.

THE ROSE GARDEN.

ROSES AS SUMMER BEDDING PLANTS.

Roses are usually utilised as permanently planted subjects, and where the beds or borders of Roses have been carefully prepared, the plants remain on the site for years in succession. As Roses are such favourite subjects with all who love beautiful flowers, few would desire to see them removed and supplanted by other subjects. Yet there are occasions when it would be an advantage to place Roses where other beautiful flowers have finished blooming. For instance, after the beds of spring bulbs are over, what more beautiful flower could succeed them than the Rose? And this is quite possible by the use of pot plants plunged in the soil, to be taken up again when the Roses in their turn are over. At Greenwich Park this method of furnishing some of the large beds in "The Flower Garden" has been adopted by the late Superintendent, Mr. R. Findlay, and with what success may be judged on reference to the illustration in Fig. 87.

The Roses used are all of the Polyantha type, the majority of which are suited to the purpose, and many would be surprised at their long season of flowering. The chief display is in June and July, but if the early blooms are removed when they have faded and the plants trimmed a little, it is surprising how soon a second crop of blooms develop, and by September the plants are almost as floriferous as in the early summer. The taller plants seen in the illustration are standards on the rugosa stock, not more than eighteen inches high. They serve excellently as foils to obviate any impression of flatness or formality in the beds, and bloom equally as well as the dwarfs. They are grown in six-inch pots, and when the beds are required for some other flower it is an easy matter to take them up and attend to them in the reserve garden or frame yard. With suitable attention the plants ripen their shoots and may be easily wintered to serve again when the time arrives, as summer bedding plants.

One of the most successful varieties used for the purpose at Greenwich is Edith Cavell, and others employed are Echo and Ellen Poulsen, the last making nice heads on standards. But there is a large choice of sorts offering a wide range of pretty colours.

Few growers realise the value of Polyantha Roses as standards. The plants may be said to flower the summer through, and only when frost nips them and makes both leaf and flower sear, do they lose their beauty. The rugosa stock is a most suitable one, and its cheapness and the ease with which it is "worked," are great points in its favour over the Briar.

BULB GARDEN.

SCILLA SIBIRICA.

A TINT of blue in field or garden exercises a fascinating influence on most lovers of nature. In the later days of spring, when along the margins of woods and coppices our woodland Squill, *Scilla nutans*, also known as *Hyacinthus Non-scriptus*, makes a fringe of heavenly blue, we experience delight, either because the colour has some spiritual purport which the soul understands, or because the assurance it gives of the constancy of the seasons, re-establishes the confidence that late frosts and early winds had well-nigh shattered. But the influence, whatever the ultimate cause, can scarcely be the result of any special awakening peculiar to the season of the nodding Squill, because it comes upon us again as the summer advances and the blue Speedwell appears on the banks, again later when the Harebells appear, and it is perhaps not altogether lacking when the blue of the Delphiniums and Anchusas makes our garden borders so attractive.

The Siberian Squill is one of the hardiest of our choicest kinds of spring-flowering bulbs. It has but to be planted in a well-drained, sandy soil in the autumn, and in the early spring it will soon develop its lovely blue flowers

in profusion, a delight and surprise to all beholders. As a pot plant it is invaluable, and as such requires only the same treatment as Crocuses, Hyacinths, Narcissi, etc., all of which need a rich sandy soil. When planted in drifts, or clumps, *Scilla sibirica* may be left for three or four years undisturbed, but the bulbs should be lifted, divided and replanted before they become too crowded. W. Auton.

BRODIAEA UNIFLORA.

It appears strange that the Spring Star Flower, *Brodiaea* (syn. *Triteleia*) *uniflora*, is absent from many gardens, especially as the bulbs are remarkably cheap, and the acquisition of a hundred bulbs or more—a quantity which would rapidly increase by means of self-sown seedlings until there are spreading masses of white flowers made all the more beautiful by the informal manner in which the seedlings spring up around the parent plants—is well worth the outlay.

I recollect one of the fairest sights I have ever seen was a great mass of the Spring Star Flower in front of a beautiful house in the vicinity of Edinburgh, where *B. uniflora* had been planted largely in the grass and where seedlings had sprung up by the thousand, and had not only multiplied in the grass but found their way in hundreds into the gravel of the path. The flowers were most beautiful, and, as the foliage dies down early, it could be cleared away, leaving nothing to disfigure the place.

B. uniflora grows from nine to ten inches in height and bears good sized white flowers, slightly shaded with blue and sweetly scented. There is a form called *B. u. violacea*, which has pale blue flowers; it is as inexpensive as the typical plant.

The bulbs should be secured in autumn, and planted at once at a depth of about two inches. The Spring Star Flower will do well in grass, in gravel, on rock work, or in the border. S. Arnott.

BOG GARDEN.

BULBINELLA HOOKERI.

THE pretty, Asphodel-like plant known as *Bulbinella Hookeri*, but still frequently listed as *Chrysobactron Hookeri*, and occasionally as *Anthericum Hookeri* has been in cultivation for many years, since it was introduced from the Antipodes. As generally seen, it is a plant with narrowish leaves and spikes of golden flowers in summer. In height it varies according to the nature of the soil and the amount of moisture it receives, from about nine inches to over a foot. It is not generally known that there are two forms, differing in size of spike and individual blooms and also in stature, but both are sold as *B. Hookeri*.

It must be upwards of forty years since I saw both of these plants under identical conditions in a garden at Falkirk, and I have now and again met with the larger and finer form although the other is much more common.

B. Hookeri is a bog plant, although it will also grow in a rich rather moist border. I have found that it was liable to die out if in a very dry soil. Increase may be effected by division of large plants or by means of seeds. I am informed that there is a much finer *Bulbinella*, called *B. Rossii*, but we seem to look in vain for its importation from some of the almost inaccessible islands of the dominion of New Zealand. It is said to be three feet high, with big spikes of fine yellow flowers. S. Arnott.

RODGERSIA.

RODGERSIA is a very interesting genus of hardy border plants, and at the time of writing, the members are in full flower, the inflorescences rising well above their fresh green and bronzed foliage. The plants are worthy of a place in gardens for their foliage alone, and most suitable for growing in raised positions of the bog garden, on the margins of lakes, or anywhere where the soil is not too wet. They are effective when planted in half-shade in association with Funkias and kindred plants. Although they thrive in any ordinary moist

soil, the most suitable rooting medium is a mixture of well-drained peat and loam. When established they develop their elegantly peltate leaves on stout stalks of a bright green or bronze. The plant is easily propagated by division in spring.

R. aesculifolia is an attractive plant with bright green foliage, changing to a bronze hue: the leaves closely resemble those of the Horse Chestnut. The flowers are creamy white, and produced in dense panicles on stalks two to three feet high. *R. pinnata* has large, pinnate leaves, and is a very effective plant with panicles of rosy crimson flowers on stems three feet tall. *R. pinnata alba* is similar in every respect to the type save that the flowers are white. *R. podophylla* produces tall spikes in sprays of creamy white, feathery-like flowers. It has large, green, five-cleft leaves, changing to a metallic bronze hue. The leaf-blade being from one-and-a-half foot to two-and-a-half feet in diameter.

R. tabularis is a distinct species from northern China. The large peltate leaves are borne on stout foot stalks fully three feet tall, and the leaves are from twelve to eighteen inches in diameter. The plant produces attractive, feathery-white flowers on gracefully arching stems. W. Logan.

ALPINE GARDEN.

PRIMULA LITTONIANA.

PRIMULA Littoniana is a valuable plant for the rock garden on account of its uncommon flower spikes, and the period of the year at which it blooms—the end of July or the beginning of August, when there is a scarcity of colour in the rock garden.

This beautiful member of the spike-flowered group of Primulas is not difficult to grow, and flowers well provided it is planted in a suitable situation where it will be protected from excessive rain in winter. The soil in which it is planted should be light, rich, and well drained, this last condition being one of the secrets of success. During winter there are no leaves of the plant visible above ground, these having died off leaving a crown below the surface of the soil. From this, in April or May, emerges a tuft of upstanding, oval, ribbed, downy and soft foliage, and a tall powdered stem terminating in a brilliant scarlet cone. As the stem grows taller, innumerable small, pendant flowers of a lavender-lilac colour burst from the scarlet bracts, commencing at the base of the cone.

The natural habitat of the plant is in the Yunnanese Alps of central China, among various lush grasses, along with the sulphur yellow *P. sikkimensis*, and the claret-rose *P. secundiflora*. R. B.

CONVOLVULUS MAURITANICUS.

THIS north African *Convolvulus* is a rock garden plant not only of singular charm, but of peculiar value, since it comes into flower during the later summer, and yields a succession of blooms over a long period when the rock garden is rather devoid of colour. Furthermore, it may often be so placed that its long, trailing growths will wander over such subjects as cut-back *Aubrietias* and shabby-looking *Phloxes*, and these it will adorn with its lovely lavender-blue blossoms, elegant stems and pretty foliage all silvered with silky down.

C. mauritanicus is not quite hardy, but no plant is more easily wintered in a cold frame, and cuttings made at this season and put out in spring will flower the following summer.

Though one would naturally give such a plant a warm, free soil, there is no doubt that it grows more luxuriously in a fairly good loam. Moreover, sun-lover that it may be, I have found *C. mauritanicus* appreciates a little shade, if only the company of taller plants, and the colour of its flowers is one that is always more pleasing when not in direct sunlight. In regard to colour, however, I may point out that there are good and indifferent forms of this species, some being of a much purer blue than others. J.

TREES AND SHRUBS.

AILANTHUS GLANDULOSA.

THE Tree of Heaven, as *Ailanthus glandulosa* is popularly known, is not so much planted as its merits warrant. The tree is a native of North China, growing wild on the mountains in the province of Chili. It is also extensively cultivated as an ornamental tree in China.

The generic name is derived from the native name of "Ailanto," meaning a tree tall enough to reach the skies, hence also the popular name of the Tree of Heaven.

The first introduction of the tree, in 1751, is associated with Peter Collinson, who, it is said, received the seeds from Père d'Incarville, a French Jesuit missionary.

According to Loudon's *Arboretum et Fruticium Britannicum*, published in 1838, quite a considerable number of trees are recorded in various parts of the country. The tallest tree mentioned was at Syon House, seventy feet high, the diameter of the trunk, three feet ten inches. In 1880, it was 100 feet high, but is now dead. According to Messrs. Elwes and Henry in *The Trees of Great Britain and Ireland*, the tallest tree in 1906 was at Belton Park, Grantham, eighty-three feet, with a girth of six feet. The heights of two other trees at Broom House, Fulham, and Linton Park, Maidstone, are given as eighty feet, the former having a girth of ten feet. The tallest specimen at Kew is about seventy-five feet in height, at present very conspicuous with numberless red-brown fruits.

Though, occasionally, trees attain somewhere in the vicinity of 100 feet, the average is between fifty feet and eighty feet. It forms a well-shaped specimen of rounded habit with large, pinnate leaves, fifteen inches to two feet long, each composed of from about thirteen to sometimes over thirty leaflets. I have just measured a leaf on a vigorous young shoot, five feet three inches in length, with forty-three leaflets. This is not exceptional on stools cut down annually to obtain a sub-tropical foliage effect. Near the base of the leaflets on both sides are several teeth each marked with a gland, hence the specific name of "*glandulosa*."

The greenish flowers are borne in terminal panicles, usually male and female flowers on different trees, though exceptions are recorded. The planting of female trees is generally recommended, as the flowers of the male have a very objectionable odour. For this reason it is usual to propagate the trees by root cuttings or suckers, so that the sex is known. The brilliant red-brown fruits (Fig. 82), are borne without fertilization, but obviously the seeds are infertile.

Examination of localities where trees are thriving indicate that the *Ailanthus* is hardy over a large area of Great Britain and Ireland, but most of the better specimens are found in the southern half. Apparently also the trees do not luxuriate in chalk soils and heavy clay. In contrast to this, we have splendid examples of trees thriving in some of the most smoke-infested areas of London. As a subject for town planting in squares, streets, avenues, and parks, *Ailanthus glandulosa* is only surpassed by the Plane and the Sycamore both of which it far surpasses in beauty.

For several weeks past, a number of trees at Kew have proved a source of considerable admiration and wonder to visitors, the point as to whether the brilliant colouring on the top of the trees is provided by red-brown flowers or fruits being a subject of controversy. Along the river boundary, near the Palace, a row of four or five large specimens is connected by smaller trees, evidently suckers, forming a most attractive bank of foliage with an abundance of fruits on the tall trees, glorious in the evening sunlight. The innumerable fruits are somewhat like those of the Ash, but rather smaller.

For so-called sub-tropical bedding the pinnate leaves of the *Ailanthus* are very effective. If cut down annually to the ground and each stool is restricted to one growth, the shoots grow to a large size in rich ground, with leaves four feet to five feet in length. A. Osborne, Kew.

SOME LARGE TREES.

I have always been particularly interested in trees, and it may be of interest to some of your readers, as well as encourage them to tell of their own experiences, if I mention a few large ones I have known.

When I first came to Norton Manor Gardens, one of the first things which caught my attention was a giant Sycamore (*Acer Pseudo-platanus*) which I should think is one of the finest specimens in the country. It has a bole-girth at four feet of fourteen feet two-and-a-half inches, and a circumference (? diameter) of 270 feet across the branches, which measure ninety-five feet, the longest individual branch being fifty feet long.

The height of the tree is fifty feet, and the estimated weight of timber, thirty tons. At a distance of less than six feet from the ground there are two main limbs, which divide into many smaller branches. The actual height and bole-girth are not exceptional, but, taken

Castle, Tunbridge Wells, a giant Portugal Laurel, then in good health. I counted round it twenty paces; it resembled a clump more than a single specimen. On the Frant side of the estate there is a very fine English Oak, with a straight, central trunk, equally branched from top to bottom, a perfect giant in bulk, and a Beech of similarly remarkable proportions.

At Cassiobury Park, Watford, there was, about forty years ago, a Silver Fir which was always considered to be the tallest in the country, before thirty-five feet of the top was blown off. About eighty feet of the trunk is still left. A remarkably tall Lime (*Tilia vulgaris*) said to be one of the first planted in this country, is also to be found in the Park at Cassiobury, though I have seen, elsewhere, much finer specimens.

At Aston Rowant, Wallingford, there is a fine clump of six Limes, nearly approaching 100 feet, and an unusually tall common Alder, with an eighty-foot trunk and twenty feet of



FIG. 82.—FRUITING BRANCH OF *AILANTHUS GLANDULOSA*.

as a whole, its bulk is double that of any others I have seen. I have no idea of the age of the tree, but if, as may be surmised, it was planted when the mansion was built, it would be over 400 years old. Except for the central branches, it is still quite vigorous.

About forty years ago, I remember seeing the "King" and "Queen" Beeches at Ashridge; they have since both died. On the Ashford Chase estate near Petersfield, Hampshire, there are many Beeches with stems over a hundred feet high without a branch, and thirty to forty feet of top growth. No thinning has been done, which accounts for the standard-like growth, the result of their attempts to reach the air and light. They grow on the lower half of a deep slope, whose chalky soil holds the water to a remarkable degree; on other parts of the estate the trees are less than half their height. The late Mr. Trevor Battye considered two Wych Elms (*Ulmus montana*) growing on the same estate to be the tallest in the Kingdom, their height being estimated at over 100 feet. I myself have never seen any taller, but their actual bulk was by no means remarkable. Another large tree at Ashford Chase is a Turkey Oak (*Quercus Cerris*) which has a bole of about eighty feet, with twenty feet more top-growth.

About twenty years ago, there was at Eridge

top-growth—the latter is generally of bush formation, and seldom exceeds fifty feet; the Aston Rowant tree owes its abnormal growth to rich soil and exceptional moisture. A giant Yew is also to be found there, which in 1913 measured nearly twenty feet round the trunk at three feet from the ground, and six more at the base. The longest branch measured thirty-five feet; the circumference of the branches was 102 feet; its height fifty two feet; and its age was variously estimated at from 800 to 1,200 years, the first sign of decay appearing only in 1913.

Here, at Norton Manor, there is a very fine, shapely specimen of *Ulmus campestris striata* about eighty feet high, with a straight central trunk, and a branch circumference of 192 feet; but I think the finest Elm I ever saw was growing in 1898 near the then naval college near New Eltham, Kent. I believe the species was *U. suberosa*, and it was growing in an open field. One of the finest Planes in the country was growing near the same college; like other specimens of *Platanus orientalis*, it was greater in width than in height.

On Southborough Common I observed in 1900 a very remarkable Beech, situated on the upper edge of a gravel pit between Southborough and Tonbridge. G. Abbey, Norton Manor Gardens, Sutton Scotney, Hants.

PHYSALIS PERUVIANA.

THE Cape Gooseberry perhaps merits more attention than it has received as a fruit to grow in an unheated greenhouse. A native of Peru and thereabouts, it has become naturalised in other tropical and semi-tropical countries, e.g., South Africa, where it is used largely for jam; hence the name Cape Gooseberry, which is, however, a misnomer, as botanically the plant has no relationship whatsoever to the Gooseberry and superficially bears no resemblance to it. The only point in common is that the berries in both cases are used for jam. It is also known under the name of Gooseberry Tomato, and this is a little more appropriate, as it belongs to the same family, the Solanaceae, as the Tomato.

Physalis is a fairly large genus but only two species are at all well-known, viz., the Winter Cherry (*P. Alkekengi*) and the subject of this article. The genus is strikingly characterised by its persistent, bladder-like calyx which encloses completely the berry. In the Winter Cherry this inflated calyx turns a brilliant orange colour when the fruit is ripe, and these beautifully tinted bladders hang on the stem like miniature Chinese lanterns. The red berry within the calyx is said to be edible, but to my taste it is somewhat nauseous and unpalatable. It would be interesting to know whether it is eaten to any extent either raw or cooked. The fruit of the Cape Gooseberry is very similar in size and shape; but, alas! the calyx does not assume such attractive colouring when the fruit is ripe. It merely turns from green to a light brown or straw colour, and the berry within a dull yellow. How often highly-coloured fruits are not so rich and agreeable in flavour as those more modestly hued. This is markedly so the case in Apples and Plums, and even in ordinary gooseberries. We see this exemplified again in *Physalis*. The orange-red Winter Cherries are sickly in taste, whereas the greenish-yellow Cape Gooseberries have a pleasant, tart flavour.

My introduction to this fruit was made in Ceylon several years ago. Seeds were brought home and plants raised. These were treated somewhat after the style of Tomatoes in a cold house, and as they gave little return the first summer were discarded. I was under the impression they would behave like Tomatoes and not endure the winter in an unheated greenhouse. By chance, a few years later, a plant grew up as a weed in a pot containing, if I remember rightly, a decrepit *Cytisus*. It was allowed to act the cuckoo and take possession of the pot. It passed through the winter successfully without heat. It was then taken out of the pot and planted in the least favourable corner of the greenhouse border. It grew vigorously and fruited abundantly, and is now in its fourth year of bearing. It is trained up the wall of a lean-to house. Two other plants have since been added, and this year sufficient fruits are being produced to allow of experiments being made in making jam, bottling, and stewing.

The plant is tender to frost, but otherwise it is wonderfully accommodating and vigorous. So far no insect or fungus pest has troubled it. A rampant grower, it will take possession of a house if unchecked; but it can be easily kept in bounds, as it does not at all resent being trimmed and cut back. In two or three weeks time it may have made so much new growth as to require the clippers again. Unless three or four square yards of wall space can be given it, the plant from the fruiting point of view is hardly worth growing. The flowers and the fruits are borne in solitary fashion, one in each leaf axil, and as the internodes are long, to obtain much fruit considerable space is required. The plant continues bearing throughout the summer and autumn, and if a small amount of fire-heat be supplied during the winter, it will fruit the year round. This mode of cropping is a drawback if fruit in any quantity be required, for example, for jam; but it is compensated to some extent by the fact that the berries, if not detached from their

cases, keep good for several weeks, so that a sufficiency can gradually be accumulated. Occasionally the berry may crack in ripening, and such naturally soon mould and does not keep.

The Cape Gooseberry is as easily raised from seeds as the Tomato, but, being a perennial, little fruit is produced the first summer in a cold house. During the second season it will cover as large an area of trellis work as one may care to allot it, and supply plenty of fruits. A single plant, with a space allowance of four to six square yards will furnish quite sufficient berries throughout the summer and autumn for dessert purposes. Apparently, every flower sets its fruit, so it must be capable of self-pollination like the Tomato. *J. Parkin, Blaithwaite, Carlisle.*

PLANT HUNTING ON MOUNT IDA, CRETE.

I was buried deep in Halacsy's work on Greek flora, when I received *The Gardeners' Chronicle* of August 29, containing Mr. G. P. Baker's account of his trip to Crete (see p. 170).

The following notes which I jotted down in consequence may be of interest to others besides myself.

The Cretan variety of *Iris unguicularis* belongs mainly to the lower hills but ascends to 5,200 feet. It flowers normally from February to April, but in the higher latitudes extends its season to May, during which month Mr. Baker found it at 4,000 feet. It is therefore, I should think, doubtful if this variety would prove later in England than the variety now commonly grown.

The description of the spathes of *Arum creticum* as "canary yellow" is puzzling. There are two certain *Arums*—our *A. creticum*, which has the lamina of the spathe white (sometimes spotted with red) and the spadix red; and *A. italicum* with the lamina of the spathe white and the spadix yellow. The latter is praised by Mr. Bowles for the brightness of its scarlet fruits which he uses to enliven *Iris* beds in their "off season," while their white-flaked leaves are handsome in spring among young *Iris* leaves.

The Hawthorn which Mr. Baker mentions is presumably *Crataegus azarolus* (syn. *Mespilus azarolus*), a species which is in cultivation. It has a fruit as large as a Cherry, and it is grown for its fruit here and there in the south of France. What are referred to as two varieties of *Tulipa cretica* would appear to be the two species: *T. cretica*, Boissier, and *T. saxatilis*, Sieber. The former is the more slender, is dwarfer and often stemless, and has narrow, shorter leaves, and smaller flowers. It mounts to alpine regions at 6,500 feet, unlike *T. saxatilis*. It is apparently *T. saxatilis*, suffused with deeper rose that Mr. Baker found the most beautiful of the bulbous plants he saw. These two *Tulips* are distinct by their colour from all other *Tulips* of Greece and the Islands.

In 1904 Pascher demonstrated that *Gagea foliosa* is endemic to Sicily and Sardinia and is not found in Crete. The Cretan plant is *G. peduncularis*. Similarly it has been recognised since Sibthorp's and Smith's day that *Corydalis rutaefolia* is distinct from *C. uniflora*, Sieber, which is the Cretan plant.

Halacsy does not distinguish the three forms of *Crocus sieberi* var. *heterochromos* described by Mr. Baker, though he gives similar colour variations. He also gives *Chionodoxa cretica* as a sub-alpine form of *C. nana*. Both, I think, are in cultivation, but it is said that *C. cretica* is not free of bloom.

Is *Pyrus parvifolia* a misprint for *P. parviflora* Desfontaine (syn. *P. amygdaliformis*, Villars, and *P. cretica*, Sieber)? This wild Pear is common in Greece and also along the Riviera, e.g., in the Estérel mountains.

The following are a few suggested names. The white Saxifrage growing in the foothills of Ida is probably *S. chrysosplenifolia*. The spiny *Astragalus* is probably *A. creticus*, Lamarek which belongs to the alpine region of Crete

and to Mount Ida in particular. The *Onosima* is probably *O. erectum*, Sibth. and Sm. Halacsy does not give any species of *Lychnis* as native of Crete—and, indeed, gives only *L. coronaria* and *L. Flos-cuculi* as native to his region. There are, however, a number of small pink *Silenes* in Crete, to one of which Mr. Baker may refer. *E. E. T.*

ORCHID NOTES AND GLEANINGS.

BRASSAVOLA HYBRIDS.

The demand for plants which produce large and handsome flowers has inspired raisers to produce them, consequently there has been a rapid development of hybrids having *Brassavola Digbyana* as a parent or grand-parent.

In the year 1889 the beautiful *Brasso-Cattleya Digbyana-Mossiae* first produced its flowers, and remained for some time an unique plant; but it demonstrated the value of *Brassavola Digbyana* for hybridising purposes. It was figured in *The Gardeners' Chronicle*, May 25, 1889, p. 657, Fig. 111, under the name of *Laelio-Cattleya Digbyana-Mossiae*. In the same year B.-C. *Digbyana-Mendelii* was flowered on the continent. These hybrids were subsequently used in connection with the different species of *Cattleya* and *Laelia* until the greater portion of these have been used as one parent. At the present time the primary and early hybrids are well-known and need no comment other than the observation that in all of them the wonderful fringe in the labellum of the *Brassavola* parent is inherited to a greater extent than in the case of later hybrids, for although in many of the latter the shape and size have been greatly improved, the fringing has been reduced to a considerable extent.

Brassavola Digbyana was the predominate partner in the earlier crosses as it affected the shape of its progeny, as well as the colour of the flowers, although none of the primary hybrids, even in the case of a dark-coloured parent, is conspicuous for its depth of colour.

For some considerable time the hybrids were few, but as the demand increased they became more numerous, and at the present time upwards of 450 have been recorded. They comprise varieties ranging in colour from pure white to yellow and deep purple, and include almost every combination of every colour to be found in the *Cattleya* and *Laelia* families. They are classed as *Brasso-Cattleyas*, *Brasso-Laelias*, and *Brasso-Laelio-Cattleyas*, according to the parents used.

There are several bigeneric hybrids in which another species of *Brassavola* is one parent, but as these are by no means common plants and do not produce flowers comparable with the B. *Digbyana* hybrids, I purposely omit them.

There are also three new artificial genera, made up of hybrids in which this species is involved. They are known as *Lowiana*, which is the result of crossing three distinct genera: *Potinaria*, which is composed of four genera, and *Rolfearia*, which is the progeny of intercrossing the *Brasso-Cattleya* group with the *Sophro-Cattleya* family. These three genera will, as time goes on, show some remarkable developments as regards the colour of the flowers, and, possibly, may produce a scarlet *Cattleya* with a fringed lip, especially if the most brilliant of our present-day hybrids are again crossed with the *Brassavola* parent.

From the cultivator's standpoint all the foregoing may be treated as *Cattleyas*, as they succeed under precisely the same conditions as any of the warm section of that family. In many of the tertiary hybrids the fringe has almost disappeared, whilst the sepals and petals have been greatly improved, and in many cases the flowers compare favourably as regards size and shape with the best of the *Cattleyas* and *Laelio-Cattleyas*. Their beautiful flowers may be enjoyed the whole year round, and in addition to their other good qualities many of them have a delicious perfume.

A selection of the best varieties would include some of the finest flowering plants among Orchids. *J. T. B.*

NOTES FROM A WELSH GARDEN.

GENTIAN Farreri this year opened its first blooms at the middle of August, and some broad plantings of this beautiful species are now covered with scores of the lovely pale-blue trumpets. This has proved to be an extremely adaptable plant here, growing with equal freedom in a deep bed of leaf-mould, in plain loam rather to the stiff side and in wet soil at the margin of the bog. *G. sino-ornata* is not less happy under similar conditions. The Willow Gentian (*G. asclepiadea*), is flowering both in the woodland and near the water, the white form being very effective against the darker blues. If this Gentian gives many variations in the shade of its flowers, which range from deepest violet to a pale and luminous azure, the plant also presents many different habits of growth. The stems, for example, may be rigid, quite upright and no more than ten inches high, or one may see specimens with the more characteristic arching growths which may be anything between one foot and three feet in length.

An interesting little plant in the moraine is *Spiraea caespitosa*, an American species which for several weeks has been bearing its three-inch fluffy spikes of blossom above its pads of greyish-green leaves. *Potentilla nitida* is also here, and still maintaining a succession of its beautiful rose-pink blossoms. *Jasione humilis* is another of our scree plants which has been flowering nearly all the summer. Among these and other successes one must record a total failure in *Viola bosniaca*. This charming species we had tried in all manner of soils and situations in the rock gardens and borders, but in none of them would it survive a second season. Last spring, by way of a final effort, we put some plants in the moraine, but they did even worse, not putting forth a single blossom before perishing.

Felicia abyssinica is still a cheerful object in the rock garden where it has been in flower since May, and here we have a *Viola* of the gracilis class labelled Royal Blue, which is worthy of more than passing mention. Many of the so-called gracilis varieties impose too great a strain upon the imagination in one's endeavour to place them in any connection with the Grecian Violet. But Royal Blue betrays its close affinity to that delightful species, not only in the dainty grace of the blossoms, which come nearer to those of *V. gracilis* than most others, but the plant has the characteristic narrow, deep-green foliage, and compact habit of the type. *Geranium hybridum* Russell Prichard is blooming as vigorously as ever on the driest of sunny ledges, where *G. Webbianum*, *Erodium trichomanefolium*, *E. Gussonii* and *E. amanum* are still full of flower. Here, too, *Sedum compressum* is showing its bold, golden clusters and *S. retusum* which has proved quite hardy, has been covered with its purple-eyed stars throughout the late summer. It is interesting to note at this season the change of colour which gradually takes place in many of these Stonecrops. *S. spathulifolium purpureum* is losing its soft dove colour and assuming its winter crimson. In *S. brevifolium* the white meal of the leaves is getting whiter and the stems ruddier. *S. oreganum* is abandoning the vivid blood-crimson of a few weeks ago, and going back to its dull reddish-green, and the beautiful *S. Palmeri* is assuming that lovely glaucous tint for which alone this plant is always well worth a place in any garden or cool house. Also, on these dry, sunny places, one notes *Verbena radicans* and its ally, *Lippia repens*, the violet *Calamintha alpina* and *Micromeria Piperella* in a soft rose.

Having suffered a check during the drought, *Kalmia glauca* has broken into bloom. In the loam and leaf-mould in which it grows, that pretty little Australian plant, *Samolus repens procumbens*, is doing well. *Veronica canescens* having covered a square foot with a film of dusty green has adorned this dull-looking foliage with numerous little Speedwells in a China-blue as fresh and delicate as that of *Campanula (Wahlenbergia) hederacea* at the brink of the water.

Bidens dahlioides which was put into a particularly dry corner of a raised border with some misgivings as to its worth and reliability, has proved a most charming plant. It has maintained an unbroken succession of white flowers, like a small single Dahlia, since early summer, and is to-day better than ever. The blooms are borne on eighteen-inch stems, and the whole plant possesses an air of distinction and quality.

Whilst the "common or garden" *Montbretia* has long ago been expelled from the neighbourhood of choicer and less troublesome plants, one must accord this plant its meed of praise as a woodland subject. Beneath tall deciduous trees it does well, and, having to contend with native herbage, its rampant nature is restrained. Then when the first

until late autumn. A group of this seen against *Cypella Herbertii*, with a bush of *Abelia grandiflora* and some clumps of *Francoa sonchifolia* at the back is singularly pleasing.

That neat little shrub *Potentilla fruticosa argentea nana*, though an all-summer bloomer, is never better than it is just after the first autumn rains. It has for nearest neighbour a patch of *Ceratostigma plumbaginoides* which, with a few tufts of *Dianthus carthusianorum*, together make a pretty group. By accident rather than design, *Ceratostigma Willmottianum*, a bush about three feet high, is against *Potentilla fruticosa Vilmoriniana*, and the clear azure of the former with the silvered foliage and Primrose-yellow flowers of the latter, constitute a most charming combination to which the fuller yellow of *P. f.*



FIG. 83.—LILIAM DAVURICUM VAR. INCOMPARABILE (see p. 211).

touches of autumn appear on some of the Barberries, when the Bracken is flushed with yellow, and there is more than a tint of red on the ripening fruits of many Cotoneasters, the flaming orange and vermilion tints of some long-established colonies of *Montbretias* seem to strike just the right note of colour.

Not less effective and seasonable are the wonderful colours of some of the Earham *Montbretias* which we have in the borders. The blooms of these are, in some varieties, as much as three or four inches across, and an infusion of crimson-scarlet gives the intense orange and vermilion hues of these striking blossoms a still more fiery tone. We have a few plants of the excellent variety, *His Majesty*, behind a group of *Aster Amellus* var. King George, and the effect, especially about sunset, is remarkably striking. By no means to be despised is the gentler-coloured *Montbretia (Tritonia) rosea* which begins to bloom at least a month earlier than most others, and continues to yield a succession of its shrimp-pink flowers

Farreri, hard-by, is by no means an undesirable addition.

Among other flowers in a good blue one notes *Cynoglossum Wallichii* an elegant plant whose colour is not excelled by that of *Gentian verna*. Tending rather towards a more violet tint is the Blue Sage (*Perowskia atriplicifolia*), and then there is that pretty annual Pea, *Lathyrus azureus*, whose flowers, especially on opening, very closely approach the wonderful blue of *Parochetus communis*. *Aster Thompsonii*, an Indian species, is gay with blossom in a fresh lavender-blue, and the dwarf variety of the same thing (*A. T. nana*) is a delightful little plant and one that usually flowers some weeks earlier than the type. The Catalan species, *A. pyrenaicus*, is another of this genus which deserves a good place, preferably rather a damp one. It makes stately three-foot stems clothed with downy grey-green leaves and crowned with large, loosely-rayed blossoms in a clean lavender-blue. *A. T. Johnson*, *Ro Wen, Talycafn, N. Wales*.

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THE GARDEN IN ANTIQUITY

XI. BEAUTY AND VARIETY IN CHINESE GARDENS.

THE antiquity of gardening in the Celestial Empire is demonstrated in many ways.

I have already alluded to the testimony of language and the ancient classics, but these are readily supplemented by reference to descriptive and historical treatises, native memoirs and monographs on agriculture and husbandry, art, fiction and folklore. We have, further, the striking evidence of present-day horticulture. My lamented friend, the late Archdeacon Gray, justly remarks (*China*, II, 193) that "If prizes for gardening were competed for by nations, the Chinese would have a fair chance of being successful competitors." The Chinaman wastes nothing, cultivates with care and profit the smallest plot of ground, is as skilful with fruits as with flowers, adorns his gardens if he has the means with pavilions and summer houses, arbours and retreats, makes artificial lakes, ponds and streams, with quaint bridges and serpentine paths, and defies alike the drought of summer and the winter's cold in his determination to bring his plants to perfection." All this shows that he has been long at school, for the gardener is not trained in a day. So much demands our attention in this interesting study that I must, in order to bring this branch of my subject to an end in this chapter, briefly summarise a few of the more important facts.

It would be a pleasing study to investigate in the first place the list of flowering plants which the early Chinese cultivated. We are all familiar with the China Rose, by name at least. The Linnean Society's *Flora of China* enumerates seventeen species, among which we find *Rosa indica*, *R. Banksiae*, *R. moschata*, *R. rugosa*, *R. multiflora*, and other well-known forms. The native name for the Rose is in southern China *Mui-kwai fa* or the Coral flower; *mui-kwai* meaning red coral or jasper. That indicates that the original was of a red colour. This is confirmed by certain allusions in the *Book of Odes*, where the Rose is introduced in the same way as we ourselves employ it when speaking of a blushing maiden.

And when walking I go

She is with me, and O

Like the hedge-rose blooms her face.

Or again:—

The day for the trip is fine,

And there with the crowd goes she.

"I see thee, my blushing rose,

With a pepper-spray for me."

There are also distinctive names for the Monthly Rose (*Ut-Kwai*) and the quarterly Rose (*Sz-Kwai chun*). It is curious to note

that in each of these names the word *Kwai* is distinct and different, showing the richness of the Chinese vocabulary. In the second case it is the name of the Cassia tree, and also stands for the fragrant Olive (*Olea fragrans*). They all have the same tone and pronunciation but are written quite differently. The Jasmine is a very favourite flower, but its name in Chinese is possibly borrowed from the Sanskrit *malati*. When Buddhism was introduced into China many Sanskrit words followed in its train, and much new flower and plant-lore as well.

We take, for example, the Lotus. This, as is well-known, is a sacred flower in all eastern lands, and is in many ways associated with the temples, monasteries, gods and altars. The plant has been grown from very early times in pools connected with temples, and more than one idol is represented as seated on the leaf or emerging from the blossom. Hence the phrase "Hail to the Jewel in the Lotus"—*Om mani padme hum*—repeated 108 times by Buddhist devotees. One of the most popular of these idols in China is Kwan-yin, and I have in my possession a wooden as well as a porcelain representation of her seated in the heart of a Lotus flower which is fully expanded. This plant is known as the *Lin-fa* in Chinese, and Gray (*op. cit.*, p. 195-6) has some interesting remarks on its cultivation and use in the south. The people use the blossoms to decorate their houses; the leaves are used instead of paper as wrappers for purchases; the seeds and roots are employed as articles of food.

The general name for Lilies is *Pak-hop-fa*, the word *pak* meaning white, and *fa* a flower, while *hop* has many uses, such as to unite, match, blend, preserve in harmony. In the Classics, however, another word is used. Jennings translates a couplet—

"I'd climb to the top of yonder hill
And gather the Lily that care can kill."

and adds that the word *Mang* is said to be the name of a mother-of-pearl Lily, which is supposed to be able to dissipate cares.

As is well-known, the beautiful Moutan Paeony comes from north China where it has long been prized as the rich man's flower, but for accounts of this I must refer the reader to *The Gardeners' Chronicle*, XXI (1884), p. 779, and *Flora Historica* ii, 84 seq. Much might be written about the popularity of other flowers with the Chinese if there were space, but I must be content with the mention of one or two others. The crested Amaranth or Cock's Comb is one, and its Chinese name has the same significance as the English. When we speak of Asters we often employ a qualifying term showing that they came to us from the Celestial Empire where they are highly prized and carefully tended. At the New Year, the leafless branches of the Enkianthus are brought into the houses, just as with us the Holly and Mistletoe. Phillips says "The Chinese hold some particular kinds of flowers in great veneration, especially the Enkianthus which they call *Tao Chong Fa*: its flowers are deemed grateful to the gods, and accordingly, at the commencement of the Chinese New Year, when the plant is generally in blossom, large branches with flowers are placed in all the temples as an acceptable new year's offering." Pages might be filled with descriptions of the flower gardens and parks of the wealthy, and especially the summer gardens of the Emperors, in Peking and elsewhere, dating from very early times, but of these we can find accounts in most of the writing of early travellers.

Turning from the flowers which have for ages been grown in Chinese gardens to the fruits which have been cultivated from very early times, we find the list to be an extensive one. I name first some which are known to everyone—following the list given by Dr. Gray—"peach, apricot, custard apple, rose-apple, pineapple, pear, plum, walnut, date, cocoanut, plantain, banana, persimmon, citron, orange, lemon, quince, guava, olive, pomegranate, and vine—the last-mentioned being grown in many varieties." Some of these are poor when compared with those grown in our own orchards.

Certain kinds of the Pears are gritty, and the Apples insipid, but I have never elsewhere eaten finer Peaches, Oranges, Bananas or Custard Apples. But to these we may add the Loquat or Chinese Medlar, of which it is said "This beautiful tree is frequently cultivated in the gardens of Rome, and the yellow fruit is of a nice taste." I first made its acquaintance in Canton in 1876, and after fifty years, found delicious specimens at the hotels and in the dining cars from Turin to Genoa and Rome in the spring of this year. Then, as Gray adds "there are the li-chi, the fruit of which is of the size of a Strawberry, the stone being enclosed in soft succulent pulp of a very delicious flavour; the lung-ngan or dragon's eye; the wampee (or wang-pi), whose fruit, about the size of a pigeon's egg, is much esteemed, and the carambola." Though I have frequently partaken of these fruits I would gladly exchange them all for our English Strawberries, Raspberries, Gooseberries, Currants, and other small fruits, or for our Damsons, Greengages, and the like. "Of these fruits," already enumerated by Dr. Gray, "the carambola is, perhaps, gathered in greatest abundance. The orchards in which it is produced are very numerous, at all events in the province of Kwang-tung. At Fati there are many orchards of the same class. Round the trunks of the carambola trees in the orchards of Leep-tak and other large villages, quantities of earth are piled; but for what reason I was never able to learn." The fruits are much sought after by the birds, so that in the season when they are ripening boys are hired to beat gongs to frighten them away. The Chinese call it *Yeung-to*. Both these words having many meanings, the use of qualifying epithets is necessary in order that confusion may be avoided. Thus, *yeung*, for example, is the word for Willow, while *yeung mui* is the name of a tree which yields a fruit like that of the Arbutus. But *mui* is the name for Plum, Apricot, and flowering Almond; and *lap-mui-fa* stands for the fragrant Chimonanthus. *To*, again, means a Peach, also a flower bud, so called on account of its plumpness. Many different kinds of Peaches are cultivated in China, and to distinguish them the word *To* receives some qualifying epithet, such as *ying*, *pin*, *mat*, while *hat-to* means a Walnut. Such a variety of names implies that these plants and fruits have long been in use, for where fruits and flowers are introduced there is usually some indication of this fact, either by the name which it bears elsewhere being imitated, or by the affix "foreign" to show it is not indigenous.

I wanted to adduce the evidence of early travellers and historians, but my space is full. When Hiouen-tsang, the famous Buddhist pilgrim, reached the western frontier of China, he found the people dressed in silk and observed Pears, Plums, Peaches, Almonds, Grapes, Pomegranates, Rice and Wheat. The famous Ginseng has been for ages in high repute. Such works as Fortune's *Tea Countries*, and the delightful articles contributed by Mr. Kingdon Ward to this journal, may be recommended to such as would pursue the subject further. Hilderic Friend.

NOTES ON LILIES.

(Concluded from p. 190).

YET another fine, upright, cup-shaped flower is that of the Lily which the Dutch call *L. umbellatum* var. *incomparabile*. Elwes* regarded this as a hybrid between *L. Thunbergianum* and *L. bulbiferum*, but it seems more likely to be one of the many forms of *L. davuricum*. It used to be confused with the variety commercially known as *atro-sanguineum*, which, however, has a deeper, richer colour, with less orange in the petals than *incomparabile*. In the garden, too, there is a difference, for while the variety *incomparabile*

* *Mon. of the Genus Lilium*, p. 20. 1881.

(Fig. 83) is easy enough to manage, *atro-sanguineum* has a poor constitution and a short life. This may account for the scarcity of the bulbs of the variety.

Though easy enough to distinguish living plants of *L. M. dalmaticum* (Fig. 84) from other dark-flowered forms of *L. Martagon* with which it is so commonly confused, it is not so easy to describe the differences. There is, however, an unmistakable quality of colour in *dalmaticum* which, so far as the writer knows, is never found in the others, and the petals are always clear and unspotted. The bulbs seem identical and there is

among the natives, discovered the plant he was in search of. He says: 'The Lilies begin to grow at about three thousand feet elevation, and are most numerous in the Grivoschie, the rocky bed of an extinct glacier. Here the chalky ground is cut up at intervals by crevasses some forty to fifty feet broad and eighty feet deep, in the bottom of which ice and snow were lying. Wherever on the side of these crevasses a little earth is lodged, the Lilies grow, having their roots close to the rock in a calcareous gravel.'

"The colour of this plant is an extremely bright though dark, purple, not easy to describe or imitate, and is a little darker

MESEMBRYANTHEMUM AND SOME NEW GENERA SEPARATED FROM IT.

(Continued from Vol. LXXII, p. 124.)

WHEN the words "To be continued" were published in *The Gardeners' Chronicle* for 1922, Vol. lxxii, p. 124, at the end of my thirty-third article upon this group of plants I had no idea that so long a period would elapse before those words would take effect. The delay has been partly caused by adverse circumstances over which I had no control, and partly and chiefly because, just before that article was published

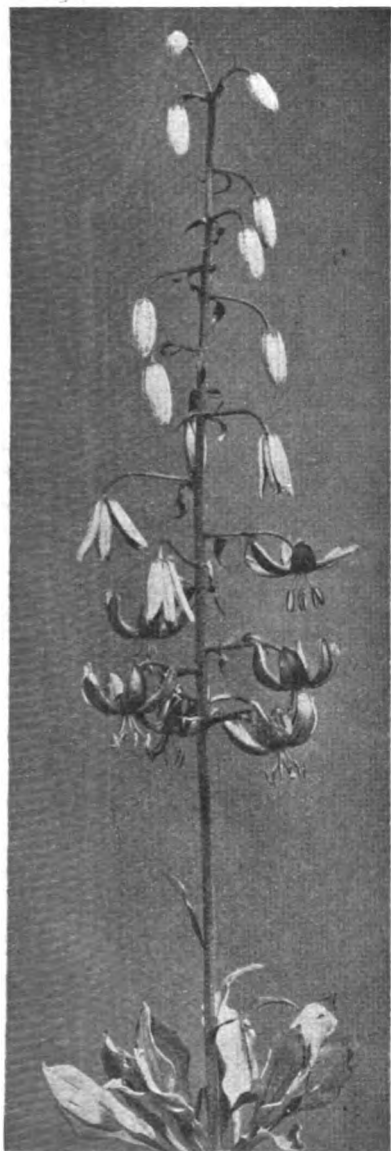


FIG. 84.—LILIUM MARTAGON VAR. DALMATICUM.

nothing to choose between well-grown specimens in stature or foliage. Each has a tiresome habit of reaching its optimum and then splitting up or dwindling. *L. Martagon* var. *dalmaticum* was brought into cultivation by Max Leichtlin in 1875, and his account of his search for it is worth repeating.* "Leichtlin informs me that, having received information of the district in which it grows, he started in September, 1874, and after a journey of seven days by steamer from Trieste, landed at Cattaro. From there he went into a very wild country on the frontiers of Turkey, and, after much enquiry

* *Mon. of the Genus Lilium*, p. 33. 1881.

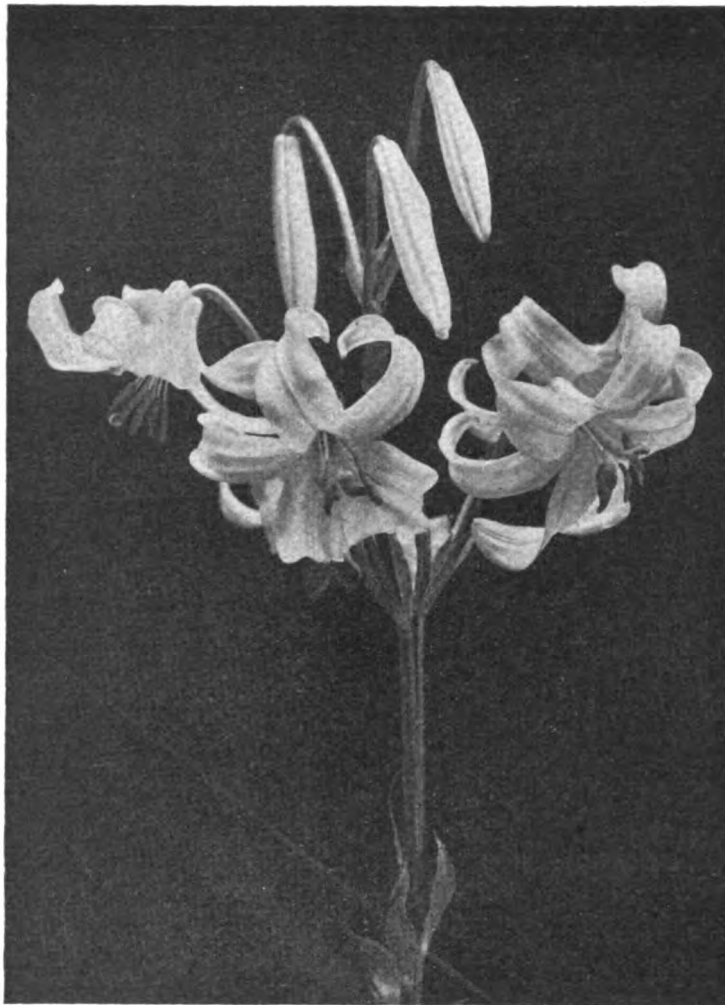


FIG. 85.—LILIUM TESTACEUM.

than that of the variety called *Cattanicum*, which is found more to the northward in the mountain-forests of Vellebich."

Of *L. testaceum* (Fig. 85), it may be said that it is one of the most useful garden Lilies available to amateurs, for it is less affected by the vagaries of our climate than many, and it is quite as easy to manage as either of its parents.

Fertilised with the pollen of *L. candidum* it generally sets seed in a favourable year, and the resulting plants are almost indistinguishable from *L. candidum*—sure proof of its origin.

The wild form of *L. candidum* from Salonica, provides gardeners with a form which fruits regularly, so it should be a simple matter for some enterprising hybridiser of Lilies to produce *L. testaceum* anew, by crossing this variety of *L. candidum* with *L. chalcedonicum*. A. Grove.

I made a discovery that caused me to make fresh investigation in the structure of the flowers, fruits and seeds of these plants, with the result that I soon perceived that during the one hundred and seventy-two years that have passed since the genus *Mesembryanthemum* was established by Linné, no author (including myself) writing about this group of plants appears to have properly dissected the flowers and examined the relationship of their parts as compared with those of other species, while the structure of the fruits and nature of the seeds has been utterly ignored. All of us have followed one another blindly by accepting the generic characters as given in books without investigating their applicability as a whole to the various species.

The discovery I allude to above was that out of seven specimens received from South Africa, all named *Mesembryanthemum pom-eridianum*, two had fruits and seeds which I

noticed were so utterly different from those of that well-known plant that they could not possibly belong to the same genus. I then examined the flowers of the seven specimens and found them to represent two distinct types of structure! Certainly the flowers and fruits and seeds of these seven specimens could not have been examined or they would not all have been deemed to be the same species, although they somewhat resemble one another, in general appearance.

This discovery caused me to make a preliminary examination of several other species that were distinct from one another in their type of habit, and my investigation soon convinced me that it is easy to demonstrate that, in accordance with the manner in which genera are made and characterised in other natural orders, the genus *Mesembryanthemum* as at present understood in books represents a small Natural Order and unquestionably consists of a number of perfectly distinct and usually easily recognisable genera, which have all been assigned to the one genus merely because their flowers have a superficial resemblance to one another.

As I have already pointed out in these articles, Haworth considered that some of the sections into which he divided the genus were really distinct genera, although he did not characterise them by structural details, and with few exceptions he did not propose names for them, and such names as he did propose have not been taken up by any author before I did so in these articles. I find, however, that Haworth was perfectly correct in his views. Yet, although his sections are accepted, the differences assigned to them are based almost entirely upon habit and vegetative characters, the important structural characters that accompany many of the vegetative characters being overlooked or ignored. If, however, we turn to Orders where a large number or most of the genera composing them have flowers that are very much alike in general appearance, such as are found in *Convolvulaceae*, *Malvaceae*, *Cruciferae*, *Umbelliferae*, *Leguminosae* and *Compositae*, we find that the genera of these orders are based upon structural differences in the flower or fruit that are constant, even if small and often not observable without dissection, but are often accompanied by a difference in habit or vegetative character.

Now I find that *Mesembryanthemum* as hitherto constituted is an exact parallel of such orders, for although the flowers and even the fruit in some cases of the various sections have much superficial resemblance to one another, yet, when examined, are in many instances found to have very different structural characters. But I have had considerable difficulty in obtaining flowers and fruit—especially fruit and seeds—of many kinds in a fit state for examination, and I would here like to acknowledge my indebtedness to and to thank those kind friends in South Africa who have supplied me with material, viz.:—Mr. A. J. Austin, Professor H. Compton, Mr. T. N. Leslie, Dr. R. Marloth, Mr. N. S. Pillars, Dr. J. B. Pole Evans, Mrs. E. Rood, Mrs. I. Wiggitt, and especially to Mr. F. Frith for generously placing at my disposal the flowers and fruits of the fine collection of species he brought to exhibit in the South African section of the Wembley Exhibition in 1924, without which some of the work to follow could not have been accomplished.

It is certainly remarkable that during the one hundred and seventy-two years that have elapsed since Linné established the genus *Mesembryanthemum* no monographer seems to have examined the details of the floral structure of the various species, while the characters presented by the fruits and seeds have been entirely ignored.

Up to the time of commencing the articles I have already published, I was under the impression that De Candolle, Bentham and Hooker, Sonder, and Berger, when describing the characters of the genus and species, must have examined the structure of the flowers (especially the ovary) and fruit, and that there was nothing more to be discovered concerning

that structure. I was therefore much surprised to find how greatly various groups of species differed in the placentation and structure of the ovary and fruit, apart from other differences in the structure of the flower, such differences being usually accompanied by a conspicuous difference in habit. I believe that this is the only large genus that has endured for so long a time as Linné left it. If it had belonged to any other order it is almost certain that it would have been divided into several genera long ago, for there are characters for their separation in plenty when looked for. Having realised this, I proceeded to examine the flowers and fruit of all the species placed under the genus so far as material has been available. This has occupied a very great amount of time and much remains to be done, because I have been unable to obtain from South Africa the necessary flowers and fruit of some of the sectional types for examination. So that this must not be looked upon as a revision of the whole group, but merely as a preliminary effort to divide it into natural genera, and to define them structurally, so that the proper position of new or imperfectly known species may hereafter be more easily and more accurately determined.

The result of my examination demonstrates that *Mesembryanthemum* as at present understood consists of two well-defined and easily recognised primary groups, viz.:—

1. Species with the ovules and seeds borne on the central axis of the ovary and fruit, that is, with axile placentation.
2. Species with the ovules and seeds borne along a central line on the outer wall or floor of the cells of the ovary and fruit, a rather peculiar form of parietal placentation.

Each of these groups can be further sub-divided into genera by a combination of some of the structural differences found in their flowers and fruits, which are as follow:—

- (a) The calyx is lobed down to its union with the ovary, or is produced above that union into a shallow cup or a short or long tube before dividing into lobes.
- (b) The petals are free almost or quite to the base, or are united below into a short or long tube, and are inserted in the angle where the calyx unites with the ovary, or on the sides or at the apex of the calyx-tube.
- (c) The stamens are erect, or are incurved over or bent down into the cup or tube of the calyx.
- (d) A true non-stigmatic style is present or it is absent, and the stigmas (the so-called styles of books) are stigmatic to the base.
- (e) The stigma is one only and sessile and circular or elliptic in outline, or the stigmas (whether a style is present or not) are 4-20 and vary in form.
- (f) The ovary is inferior, or it is partly or more than half superior.
- (g) The fruit is indehiscent, or it opens by valves.
- (h) The fruit is one-celled, or it is 4-20-celled.
- (i) The valves of the fruit (capsule) are provided with expanding keels, or those organs are modified into non-expanding wings.
- (j) The cells of the capsule are roofed with cell-wings, or they are open and without cell-wings.
- (k) The opening of the cells of the capsule is nearly closed by a tubercule, or there is no tubercule at the opening.
- (l) The seeds are wingless, or are broadly winged.
- (m) The seeds are regularly arranged in a single whorl around the central axis, or they are irregularly placed in the cells.
- (n) There is also the very important general character and nature of the leaves and whether they are alternate or opposite, or dotted, or are without dots.

Of these differences only three or four have been even mentioned by authors and have

apparently been over-looked. Yet in no other order of plants do we find that such a multitude of perfectly distinct characters are allowed to remain in combination in the same genus. I therefore propose to utilise these characters in various combinations for the purpose of dividing this hitherto unwieldy heterogeneous group into smaller and more uniform genera, so that species can be more easily referred to their proper position. For in the monographs as they at present exist, I find the arrangement so chaotic that totally different types of structure are mixed together in the same group. And at the present time species are being described and referred to this or that group or supposed affinity in a most haphazard manner, or are described without any indication of affinity, rendering it almost impossible to identify the species without seeing the type specimen. And I myself must plead guilty of having hitherto done this and contributed to the chaos. This, however, has been unavoidable, as there is no means of discovering from books the true affinity of many of the species. Added to this there is the further difficulty of knowing to what genus some of the species described by Aiton and Haworth should be referred. For, as I have elsewhere pointed out, the two most recent monographs of *Mesembryanthemum*—that of Sonder and of Berger—are compilations without any original research work embodied in them, chiefly based upon the excellent figures and descriptions in Salm Dyck's work, which, good as they are, are sadly deficient in the structural details that are most needed, and in many cases are figured and described under a wrong name, and as these names and descriptions are more or less copied in the later monographs alluded to, without investigation as to whether they represent the plants Linné, Haworth or Aiton intended should bear those names, there are many cases where the species described in these monographs are quite wrongly named. A conspicuous instance of this may be cited in the case of *M. glomeratum*, Linn., which as figured or described by Salm Dyck, Sonder and Berger, is not that species at all, but is *M. polyanthum*, Haw., while the real *M. glomeratum*, Linn., is the plant those authors have as *M. roseum*, Willd. The corrected synonymy of these and many others will be given hereafter under the respective genera to which I refer the species.

The division of *Mesembryanthemum* as hitherto understood into new genera renders it necessary to consider and decide which of the species known to Linné should be accepted as being typical of the genus, that is, those which best accord with the characters assigned to this genus by Linné. This is not quite a simple matter, as the following will demonstrate.

When establishing this genus Linné placed it in his Class *Icosandria* (i.e., with numerous stamens), and the Order *Pentagynia* (i.e., with five styles or stigmas). In his *Genera Plantarum*, ed. 5, p. 215 (1754), and ed. 6, p. 252 (1767), he characterises the genus *Mesembryanthemum* as follows:—Calyx half 5-fid (i.e., 5-lobed), persistent. Corolla monopetalous; petals very numerous, in several series, with their claws slightly united. Stamens numerous, as long as the calyx. Ovary below the receptacle (i.e., inferior), crowned with five obtuse angles; styles usually five, subulate, erectly-reflexed, stigmas simple. Capsule fleshy, roundish, marked with five umbilical rays, and with as many cells as there are styles. Seeds many, rounded.

At the end of the generic characters Linné remarks in italics that "The number is not constant, some have a four-fid calyx, with four styles; others have ten styles." Such remarks were always added by him to indicate species that diverged from what he considered to be essential characters of the genus.

It should be noted that although Linné and other authors describe the stigmatic organs as styles, they are really stigmas, being stigmatic to the base. So far as I am aware, a true non-stigmatic style is not present in any of the species known to Linné. N. E. Brown.

(To be continued.)

NOTICES OF BOOKS.

*The London Catalogue.**

WITH the great additional number of plants that has been added to the British flora as a result of the activities of many specialists and collectors it was natural to suppose that a new edition of the *London Catalogue of British Plants* has been a necessity for some time past. The previous edition was published in 1908. The larger and more intricate genera have been deputed to specialists for preparation for the new edition. It was almost inevitable that a number of specific names would be changed as a result of much research. Not many generic names have been altered, *Pyrus* being, perhaps, the most important. All the species with a two- to three-celled ovary have been placed under *Sorbus*, apparently as a result of the monograph of Dr. T. Hedlund. As a genus, *Sorbus* is not new, so that few will question the advantage of the change.

record them. *Epilobium*, with thirteen species and one variety, has thirty-five hybrids recorded: so this will give some idea of the work entailed by those who attempt to collect and identify these ever-changing forms of native plants. The number of species of *Alchemilla* has been raised from three to fourteen, with two varieties, as a result of the activities of one authority. Considering the number of aliens that turn up in Britain, very few have been recorded, possibly due to the limitations of space. The printing is excellent, and much clearer than that of the 1908 edition. One egregious printer's error, in placing *Scorzonera* under the heading of *Campanulaceae*, instead of at the end of *Compositae*, has already been corrected by the reprinting of the middle four pages of the catalogue. Mr. Frederick J. Hanbury is to be congratulated upon the general excellence of this new and eleventh edition of the *London Catalogue of British Plants*, and the "explanation" he gives, by way of preface, including observations by specialists in certain genera, forms by no means the least interesting part of the issue.

PLENTY OF APPLES.

There is no longer any doubt that I underestimated my crop of Apples when I gave it as "average." It will probably turn out to be one of the heaviest crops I have ever had, largely owing to the high average size of the fruit. During the greater part of the month Beauty of Bath was being marketed day after day. The fruit was of exceptionally brilliant colour and sold well, even at a time when market quotations for this variety were very low. This will soon be followed by Worcester Pearmain, which is badly disfigured by scab, and James Grieve, which is particularly clean and well-coloured. Early Victoria supplied the market with cooking Apples, and I am now dealing with a full crop of Lord Grosvenor. Late varieties will be very heavy with me, both Bramley's Seedling and Lane's Prince Albert carrying fine crops. Apparently I am one of the lucky growers this year, for the Apple crop is very patchy. Evidently Apples managed to ripen their wood last year in my district!

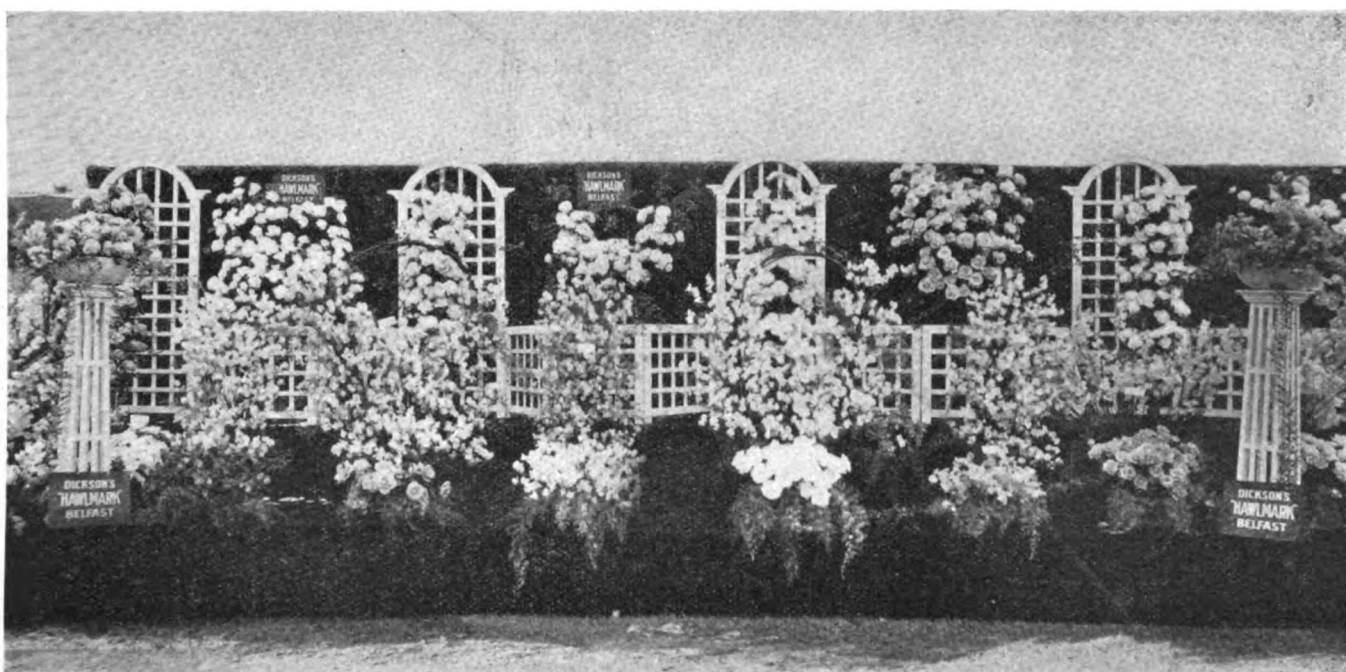


FIG. 86.—MESSRS. ALEX. DICKSON AND SONS' LARGE GOLD MEDAL EXHIBIT OF ROSES AND SWEET PEAS AT SOUTHPORT SHOW (see pp. 198 and 199).

Some idea of the changes that have been made may be gleaned from the fact that seventeen species of British Roses are admitted, the whole of which fall under 170 varieties, with twenty-six hybrids, making a total of 196. Hieracium numbers 248 species, seventy-six varieties, and eighteen forms, making a total of 342. The previous edition gave a total of 283. The total lack of hybrids in Hieracium is significant: for the species can dispense with insects and even sex. Taraxacum is similarly constituted, yet no one seems to have advocated the multiplication of names in this list. All the change consists in the raising of the status of one variety to the rank of a species. There are 120 species of Rubi, eighty-one varieties, and twenty-three hybrids, making a total of 224: but these, like the Roses, are entomophilous plants. The species of Salix are also entomophilous and dioecious, so that it gives no surprise to find that eighteen species all told, have given rise to seventy-one hybrids in Britain. The hybrids between several of the species are endlessly varied, but no attempt has been made here, or perhaps anywhere, to

MARKET FRUIT GARDEN.

RAIN fell on seventeen days during August, making it seem to be a much wetter month than it really was. The total rainfall at my place was 1.74 inch which is not at all an unusual amount. Last year we had 4.63 inches in August, and in 1917, 5.66 inches. For all that, rain fell so often, that the work of fruit picking was seriously hindered. I have seldom known such a difficult time for harvesting Plums and early Apples. They were backward in beginning to ripen, so that a late start was made; and now everything seems to have come on with a rush. Several of the early cooking varieties of Apples have become slightly over-ripe, and even late kinds begin to look mature. However, when the last of the Plums have been gathered arrears of Apple-picking will soon be overtaken. The wet weather following the drought caused Apples to swell rapidly, and some very fine fruit is to be seen, except in the case of varieties most liable to scab. This disease increased considerably during the wet weather. Weeds also grew rapidly, and the land has been too wet to deal with them, even if the men could have been spared from picking.

PLUMS SCARCE.

The bulk of the Plums were disposed of during August. River's Early Prolific and Czar served me well, but Victoria and Belle de Louvain were very scarce. There was a time, when Czar was in season, when prices fell ridiculously low considering the very meagre crop of Plums in the country. This was due, not to home-grown supplies, but to heavy imports of continental Plums, which arrived in poor condition, and had to be sold quickly at prices which meant loss to the shippers. Fortunately, this soon checked supplies and prices have since been good. At the time of writing, I am marketing a moderate crop of Pond's Seedling of fine quality at prices which have varied from 15/- to 16/6 per half-bushel of twenty-eight pounds. Ripe Victorias, selected fruit in chip baskets of seven pounds, sold even better, making up to 5/-, which is equal to 20/- per half-bushel. The only variety to follow Pond's Seedling is Monarch, which is very light indeed. President is quite a failure this year.

GRASS AND COLOUR.

Grassing down an orchard is the best means of increasing the colour of the fruit. I am

* *The London Catalogue of British Plants*. Eleventh Edition. London: George Bell and Sons, 6, Portugal Street, W.C. 1925. Price 10d.; interleaved and in limp cloth, 1s. 6d.

becoming more than ever convinced that grass is better than clean cultivation in established plantations in my conditions. This year there has been much fruit of poor colour in the markets. I have seen very few samples of Beauty of Bath of really bright colour. The same variety off grass was brilliant, and realised much better prices in consequence. The grass strip method, cultivated between the rows by horse-drawn implements only, has not, so far, given me quite such fine colour as entire grassing, but it does have an influence. I hesitate to abandon this small amount of cultivation, because I think that plantations so treated may score over those entirely under grass in a really dry season. The strip method seems to answer very well for Plums, giving colour without prejudice to size. One hesitates, however, to advise grassing down where clean cultivation is giving good results. It probably would not answer well in all districts. Some growers have found that their trees die back if put under grass.

MARKETING APPLES.

Growers are complaining bitterly about the poor market for Apples this year. Covent Garden, at any rate, has been over-supplied, particularly with early cooking varieties, and prices have been low for any but the very best samples. This seems to be absurd in a season when there is officially reported to be no more than half a crop of Apples in the country as a whole. Such a state of affairs should surely give pause to those who advocate further planting for commercial purposes. One thing is certain: there is no prospect for any grower who is not determined to produce fruit of high quality and to present it in the best form. The public seem to demand better quality than they did a few years ago.

In disposing of Apples, it is a great help if one can find a market for rough samples, which is not always easy. This enables the grower to send nothing but good, clean fruit to his best markets. I am fortunately placed for such a rough market. When packing is in process all scabby and otherwise disfigured fruit is put into bushel baskets and sent away to this market, where it makes a fair price considering its quality. In a season like the present, when scab is rampant, the proportion of fruit which has to be treated in this way is rather alarming, but it is the only means of securing a good sample for markets that can pay for it.

EARLY SPRAYING FOR SCAB.

Evidence is accumulating as to the value of early spraying for Apple scab. The work of Professor Salmon and others in this direction in this country has already been referred to more than once in these notes: and a good many growers this season followed their recommendation of spraying at the pink bud stage. Now from the Tasmanian Fruit Division comes the report of investigations which demonstrated the importance of still earlier spraying. It has been the custom in Tasmania to give one application only in the pink bud stage; and in normally dry seasons this controlled the disease very well. In wet seasons, however, it failed; and it was noticed that a few orchards that were sprayed earlier carried much cleaner fruit. This led to trials which verified the value of early spraying. The most successful results were obtained by spraying first at the "delayed dormant" period, and again at the pink bud stage. This was the case no matter whether Bordeaux Mixture or lime-sulphur was used; but the former gave decidedly the better results. For the delayed dormant spraying quite a strong Bordeaux mixture was used (6-4-40), but this formula might not be safe in this country. It is, of course, quite likely that scab becomes active earlier in Tasmania than in England; so that the treatment might not answer here. But anything is worth trying in the attempt to control this worst of diseases, which again this year is causing enormous financial loss to growers in many districts. In my own case, more than half the fruit on some of the very susceptible varieties is fit only for a rough market, where it sells at low prices. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. 111-116).
(Continued from p. 195).

ENGLAND, SOUTH.

BERKSHIRE.—The fruit crops in these gardens are disappointing. With the exception of Pears, all fruit trees flowered profusely, but many varieties of Apples in our orchard are barren of fruit. Bush trees in the walled-in garden are carrying fair crops. Bramley's Seedling, Lane's Prince Albert, Annie Elizabeth, Allington Pippin, and Worcester Pearmain are among the best cropped varieties, whilst trees of Blenheim Pippin that failed last year have fair crops. Plums on walls are an average quantity, but the crop on standard Plums suffered from frost. Small fruits, generally, were abundant, especially Gooseberries. Strawberries promised well but suffered from the drought on our light soil. This is, I believe, my thirty-seventh report of the fruit crops, and we have had some better years, and certainly some worse. *J. Howard, Benham Park Gardens, Newbury.*

—The fruit crops as a whole are disappointing. The soil is a very heavy loam, partly on clay and partly on sand, and in a dry spring and summer is difficult to work. The water is heavily charged with soda, and is detrimental to plant life in many cases. *J. A. Hall, The Grange Gardens, Sutton Courtenay.*

—Owing to the wet winter and spring, and drought in June, the Strawberry crop was a failure. Apples are inclined to drop. Pears are scarce, but trees of William's Bon Chrétien are carrying nice fruits. All bush fruits were plentiful. Apricots and Damsons were in bloom when 12° and 17° of frost were registered in succession. *A. B. Wadts, Englefield Gardens, Reading.*

DORSETSHIRE.—Some Apple trees, notably the variety Bismarck, are, in spite of spraying, attacked by scab. Pear trees are healthy. Plum aphid was a trouble, but Plums and Damsons are now making healthy wood. Gooseberries were decidedly good; Black Currants an average crop, whilst Raspberries, although plentiful, were smaller than normal. The variety Lloyd George promises well for a crop from the tips of the current season's canes. Late Strawberries, owing to the favourable position of the gardens, withstood the drought well, and were very useful. The Duke variety was, generally speaking, the best of the eight varieties we have grown this year. Our soil is a medium loam, overlying chalk. We did not suffer badly from the spring drought, owing to the position of the gardens at the base of a watershed. *H. F. Maidment, Criche Estate Gardens, Wimborne.*

—A goodly few Apple trees are fairly well cropped, but the majority of Apple trees are nearly barren of fruits. Pears are very scarce. A few sorts of Plums are fairly well cropped, but, on the whole, Plums are not very plentiful. Gooseberries were a heavy crop, and of good quality. Currants, of sorts, were very fair. Raspberries and Strawberries would have been very good, but the spring drought spoiled them and resulted in a short season. *Thomas Denny, Down House Gardens, Blandford.*

—The Apple crop promises to be very good, though they are still falling off. Pears are a failure: there was very little blossom, and the few fruits that set are of poor quality. Plums and Cherries have nearly all fallen, but the few left are good. Strawberries started well but were dried out. Gooseberries were good, but Currants and Raspberries were small. *W. E. Axford, St. Giles Gardens.*

HAMPSHIRE.—A very wet and cold spring was followed by dry, tropical heat during June, when only 0.04 inch of rain fell. This dry period lasted until the 22nd of July, when

three-quarters of an inch of rain fell. During the latter part of this dry spell Apples dropped freely. The best cropped dessert varieties of Apples are Allington Pippin, Blenheim Pippin, Lady Sudeley, Worcester Pearmain, Beauty of Bath, and Ben's Red, and we have a fine crop of Bramley's Seedling, Lane's Prince Albert, The Queen, Peasgood's Nonsuch, Golden Spire, Lord Grosvenor, and Warner's King. Our soil is a stiff, clayey loam, well intermixed with flints in the sub-soil. *George Ellwood, Swanmore Gardens, Swanmore.*

—The crops of Apples, Pears and Plums in the Test Valley are disappointing, mainly attributable to the unpropitious weather that prevailed last autumn, in consequence of which the wood failed to ripen and fruit buds did not form. Strawberry plants were affected by the excessive wet of last winter and spring. In some gardens and fields the Strawberry crop was soon over owing to dry weather following a cold, wet spring. *F. Gooch, Bossington House Gardens, Houghton, Stockbridge.*

—The fruit crops are disappointing. Apples are a fair average crop, and Apple trees in general are healthy. Pears are practically a failure, which I attribute to the large crop of last year. Plums are not so good as was expected, but Plum trees are clean and healthy. The varieties Early Rivers, Czar and Victoria, are carrying good crops. Strawberries bloomed well, but the berries failed to swell. All small fruits were plentiful and of good quality. *A. J. Legg, Dogmersfield Park Gardens, Winchester, Basingstoke.*

—All varieties of fruit trees flowered most profusely in these gardens, but cold winds damaged the Pear and Apple blossom a good deal so that the set of fruits was not so good as it would have been under more favourable conditions. Plums are an average crop. Peaches are a failure owing to the cold winds and late frost during the flowering period. Strawberries were good and plentiful; Raspberries were especially good; Currants were also plentiful, but Gooseberries were not so satisfactory. The soil is of a heavy nature resting on chalk. *W. G. Osborne, Sutton Manor Gardens, Sutton Scotney.*

KENT.—The striking feature of this year has been the extraordinary amount of fruit blossom and the failure of so many kinds of fruits. During the flowering of Cherries and Plums there was much wet weather, in fact, hardly a day passed without rain. Notwithstanding this, the Cherry crop was fairly good, with the exception of the early varieties. The failure of Plum blossom was, I think, due to the high temperature which occurred during the setting of the fruit. Pears are a total failure, due to frost; the young leaves expanded at blossoming time and showed serious injury. The Apple blossom was strong and vigorous, and in great profusion, but, as is usual in such circumstances, the crop will not be exceptional. Small fruits were generally good, with the exception of Strawberries which were spoiled by the drought. *E. A. Bunyard, Maidstone.*

—Apples are an average crop. Lane's Prince Albert and Bramley's Seedling are the most satisfactory varieties. Pears are well under the average, but the fruits we have are clean. Plum River's Early Prolific was a heavy crop, and with the exception of Coe's Golden Drop and Victoria, there is an average yield of other varieties. Morello Cherries on walls were very good. Strawberries were well under the average yield, but the quality of the berries was good. *T. Cain, The Cottage, Dashwood, Gravesend.*

—The Pear crop is the worst for over twenty years. Strawberries were very poor both in quantity and quality owing to drought, but where, as in my orchard, there is an unlimited supply of water, the crop has been phenomenal in size, quality and length of cropping. Givon's Late Prolific was especially good. Raspberries were a very fine crop.

Black Currants were poor owing to the drought, but Red Currants and Gooseberries were good. Apple trees set an immense crop but they dropped freely during the early summer drought. *Charles E. Shea, The Elms, Fooks Cray.*

—The earlier ripening fruits such as Cherries, Strawberries, Raspberries and Currants have been good and plentiful, but all on the small side, especially Strawberries and Raspberries, owing to drought just at the time moisture at the roots was necessary to swell the crop. Most fruit trees blossomed well, but the fruits of Pears and Plums failed to set. Apples appear to be the one redeeming feature among the hardy fruit crops. A violent thunder storm accompanied by the worst hailstorm on July 22, that has been recorded by the oldest inhabitant, did irreparable damage in some parts of west Kent and Essex, reducing the crop and crippling the young shoots for next year's supply. Most of the land rests upon clay so prevalent around London, though there are exceptions well within a mile or so from where this is written. *James Mayne, 32, Wigtown Road, Eltham.*

—Sweet Cherries in the Orchard were a fair crop, and Morrells also were good. Apples, Plums, Peaches, and Nectarines are poor crops. Raspberries, Gooseberries, and Black Currants were plentiful, but Strawberries were only half a crop. Raspberry Lloyd George and Pyne's Royal were very fine. *J. H. Shann, Betteshanger Park Gardens, Eastry, Deal.*

MIDDLESEX.—The crops of most kinds of fruit this year are much below the average. Of Apples, some varieties are bearing a fair crop, others just the reverse. Pears have failed entirely, and the same is the case with Plums. Peaches were a fair crop, and the trees are making good growth. Cherries were below the average in yield; fruits of Napoleon Bigarreau were very fine. Gooseberries were satisfactory. Raspberries and Strawberries very fair, but from want of rain, together with the excessive heat of July, the season for this fruit was very short. All fruit trees are making splendid growth due probably in a great measure to the roots having become thoroughly moistened last year. *H. Markham, Wrotham Park Gardens, Barnet.*

—Most orchard trees flowered profusely and were a beautiful sight in spring; I do not think I ever saw them look better. The Apple crop is an average one, but owing to the prolonged drought of July, the fruits dropped freely. The Pear crop is very disappointing. Bush fruits have done well in spite of the summer drought, and Raspberries have been an excellent crop where attention was given to mulching and watering. The same remarks apply to the Strawberry and Loganberry crops. The soil is a strong clay, but gives good results if well worked. *James A. Paice, Sunnyside Gardens, Mill Hill.*

—Once again the fruit crops have failed. The spring gave wonderful promise, as most kinds of fruit trees blossomed abundantly, which certainly upset the theory that an abundance of sunlight is essential to the formation of fruit buds. Against this, however, arises the question whether the blossom was sufficiently matured to develop into perfect fruit. The weather following the flowering period was not conducive to the perfect development of the embryo fruits. Apples dropped freely, owing to such large quantities setting on certain varieties, but we shall have an average crop. *Geo. H. Head, Fulwell Park Gardens, Twickenham.*

—Peaches and Cherries set exceedingly well but the fruits dropped freely soon after setting, through cold winds and fog. Raspberries and Strawberries had to be watered in July, also Peaches. The soil is very light with a gravel sub-soil in some parts, and in other parts an iron-ore sub-soil. *James T. Weston, Hatchford End Gardens, Cobham.*

(To be continued.)

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Hardy Fruits.—The notes on thinning and gumming on p. 194 deserve to be carefully read by fruit growers. Thinning fruits in a young stage is often omitted chiefly owing to the shortage of labour, or through fear that quantities of the fruits will fall naturally from the trees. Shortage of labour is admitted to be general in gardens, and skilled organisation is needed to maintain anything approaching perfection in all departments. Fruit-growing is one of the most important departments in many establishments, and any details of culture whereby improvement can be made should receive due attention. Some of the best

into my note on the double-flowered Trollius. I was, of course, writing as a gardener for gardeners, though I might well have qualified my use of the word "petals" by adding "or more correctly sepals" or something of that sort, for it was to the conspicuous parts of the flower that I referred. It would have been more respectful to the scientific status of *The Gardeners' Chronicle* if I had been more scientifically precise, and to science I apologise. One cannot be too careful in a journal which is at once a gardening paper and a scientific organ. Misunderstandings might arise like that of the man who bought seeds of a Nasturtium which was said to have pure white flowers, and was very cross when he got a crop of common water-cress—*Nasturtium officinale*. In the case of my error as to the number of sepals commonly carried by normal flowers of *Trollius europaeus* I can only plead sheer ignorance, though at

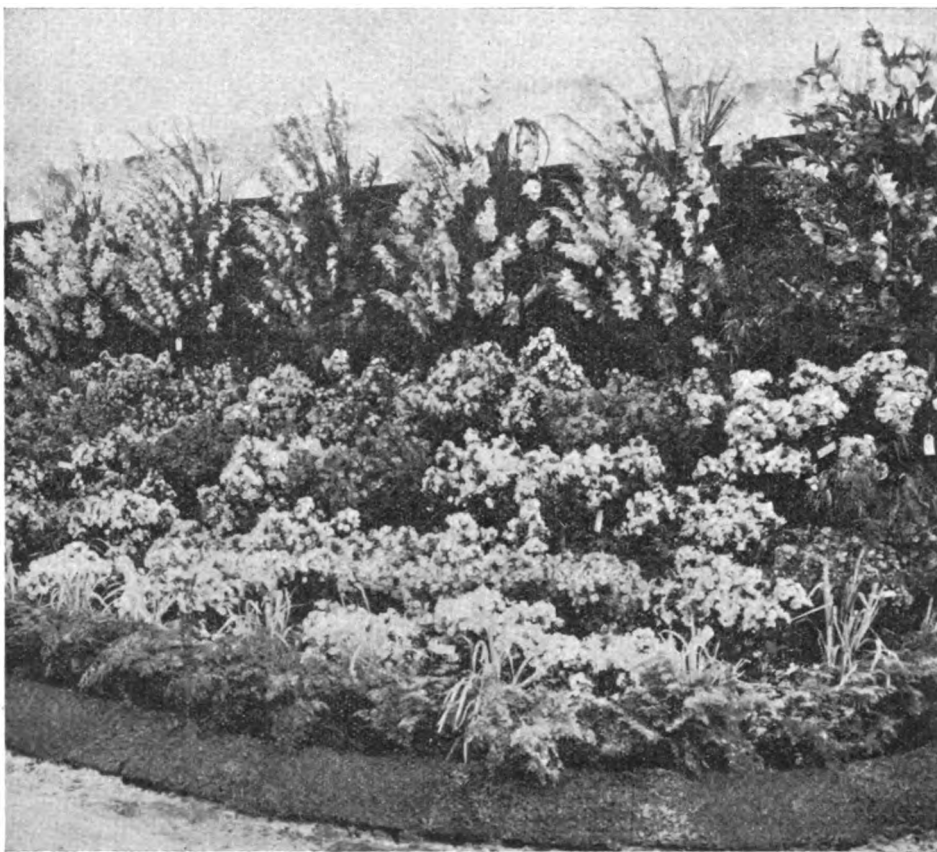


FIG. 87.—PART OF MR. H. J. JONES'S LARGE GOLD MEDAL EXHIBIT OF PHLOXES AND DAHLIAS AT SOUTHPORT SHOW (see p. 199).

fruit growers not only thin the fruits when small, but thin the fruit blossom before it has opened. This work carried out by lads forms excellent training for Grape thinning at a later stage. Regarding trees bearing every other year, would not "thinning" and "feeding" if carried out systematically tend to produce an annual crop? The roots of fruit trees must receive attention if good results are to be obtained. Observation and reports during the present season (which has been a somewhat severe test for stone fruit) tends to strengthen the importance of providing conditions suitable for healthy root action near the surface. The careful grower will always guard against gumming in his stone fruits, the chief reasons for which are given by Mr. Miller. *C. Ruse.*

Double-flowered Trollius.—I am very grateful to Mr. J. Parkin for drawing my attention to the two errors which crept

the same time I plead that I had a glimmer of a notion that I might be wrong, and having written "five," I wondered, wobbled, and hedged by adding "or so." At the time of writing I had no book of reference immediately at hand to which I could refer and no *Trollius* flowers to examine. Further, I am ashamed to confess that I did not examine the flowers of my find to see if petals or stamens were present, though I did notice what appeared to be a normal number of carpels. Further, I was interested to find that there grew from the stem just below the flower, several leaflets, bracts, stipules, or what not, which appeared to have become petaloid—or should I say, sepaloid? Roughly, they were like small, ill-formed leaflets in form but had assumed the pure yellow colouring of the sepals just above. If my plant flowers next year, I shall be very happy to send flowers to Mr. Parkin for examination, when he may care to report scientifically upon it in *The Gardeners' Chronicle*. *Clarence Elliott, Stevenage.*

SOCIETIES.

ROYAL OXFORDSHIRE.

THIS society, for the first time in its existence, decided to hold a Floral Week in August, and judging from the enormous crowds of visitors, the event was a complete success.

The weather was none too favourable on the Monday, and on Wednesday it was wet, but the remainder of the week it was fine.

The exhibits were staged in two large marquees and at the entrance of No. 1 Tent, Messrs. JAMES VERT AND SONS exhibited a magnificent group of fruit trees in pots, also a splendid collection of Hollyhocks.

Mr. JOHN MATTOCK, of Headington, arranged a Rose garden at the approach of which was an arch and a border at the back containing pillars of Roses, groups of Dahlias, Asters and Antirrhinums. In the centre were beds of Roses. This exhibit was awarded the Silver Challenge Cup presented by H. J. Bradley, Esq.

Mr. G. PRINCE, of Longworth, exhibited a gorgeous bank of Roses which was greatly admired by all. Messrs. WEST AND SON, Oxford, had an imposing exhibit of various flowers and wreaths, also dwarf Japanese trees. The stand set up by Messrs. FIELD AND JACOB, of the Market, Oxford, was the centre of attraction and contained some works of very fine art. Mr. W. J. UNWIN, Histon, Cambs., excelled in his stand of Gladioli, the whole being arranged in an artistic manner. Mr. W. T. MATTOCK also had a charming stand of Gladioli and Carnations. Mr. A. ROWLES, Oxford, exhibited a bold stand of Gladioli. A charming exhibit was set up by Mr. W. YANDELL, Castle Hill, Maidenhead; Gladioli formed the background of this group and the front was edged with Violas. Mr. J. JOHNSON, of Garsington, had excellent Gladioli and Carnations. A good collection of herbaceous flowers came from Messrs. E. W. GURDEN AND SON, whilst Mr. E. GALLAGHER, Chalk Hills Nurseries, had a choice collection of the newer varieties of Phlox. Messrs. H. SMART AND SON staged a collection of fruit. In the centre of tent No. 2, was a choice group of plants not for competition sent by Mrs. G. H. MORRELL, of Headington Hill Hall, whose gardener, Mr. A. Gibson, arranged it in a most skilful and artistic manner.

In the competitive class for groups of plants Mrs. LESSING (gr. Mr. Town), won the first prize; second, Mr. T. H. ROSE. An interesting and instructive exhibit was shown by Mr. W. A. ADAMS which comprised thirty-three dishes of Potatoes.

Fruit was fairly represented. Sir GEORGE WHITEHEAD was placed first for Melons with a good specimen of Hero of Lockinge. Mr. A. E. BRADSHAW was second. For Peaches, Mr. A. E. BRADSHAW was first and Mr. TOWN second. The two bunches of Grapes, Mrs. Pince, shown by the Rev. E. H. ALLINGTON, were placed first and Mr. R. WADHAM won two first prizes for white and black Grapes respectively.

The East Oxfordshire Society in combination with the Royal Show, held its exhibition on the 14th and 15th, filling one large tent with some excellent exhibits. The principal prize winners were: Mr. T. H. BLENCOWE, Mr. G. D. PARKER, Mr. H. BLENCOWE, Mr. G. BRICKNELL, Mr. E. MOSS, Mr. W. ING. The last named exhibitor won the Silver Challenge Cup offered for the winner of the highest number of points gained throughout the show. Mr. JOHN MATTOCK won the Fifty-Guinea Cup presented by H. J. Bradley, Esq., for the exhibit of the greatest merit in the show. Gold Medals were awarded to Mr. JOHN MATTOCK, Messrs. JAMES VERT AND SONS, Mr. W. J. UNWIN, Messrs. FIELD AND JACOB, and Messrs. WEST AND SONS. Silver Medals were awarded to Mrs. G. H. MORRELL, Mr. WILLIAM YANDELL, Mr. GEORGE PRINCE, Mr. J. JOHNSON, and Messrs. H. SMART AND SON. Bronze Medals were awarded to Mr. E. GALLAGHER, Mr. W. T. MATTOCK, and Mr. A. ROWLES. Mr. W. ADAMS was the winner of the *Oxford Times* Challenge Cup.

DUNDEE.

AUGUST 27, 28, and 29.—“One of the finest displays ever held in Dundee” was the verdict of those most competent to judge of the annual exhibition of the Dundee Horticultural Society, held on Magdalen Green, Dundee, on the above dates. The weather proved exceedingly favourable, the gate receipts were up by over £100, on the opening day, and the Dowager Countess of Airlie gave the proceedings a capital send off. The most outstanding section was that devoted to cut flowers, the exceptionally fine colouring of the blooms being a revelation to southern horticulturists.

POT PLANTS.—This section formed an extremely interesting part of the exhibition, and included a great variety of finely-grown plants. The “blue ribbon” of the show, the Dundee Corporation Challenge Cup, offered for the four best plants, foliage and/or flower, distinct, was worthily gained by Miss E. F. GIBSON, Inveraray, Broughty Ferry (gr. Mr. George Reid), with a very fine entry, comprising two *Ixora* plants, *Statice* and *Clerodendron*. The plants were in grand condition, the wonderful bloom and fine colouring evoking the most favourable comments. The bulk of the honours in this section went to Inveraray, and included fourteen first prizes. But mention must also be made of the finely-grown exotic Ferns sent from Inveraray gardens. These were deservedly admired and Mr. Reid was heartily congratulated on his success. There were also some fine entries from the well-known gardens of Bracknawe (gr. Mr. John Clark), and Lismore, Broughty Ferry (gr. Mr. J. Dick).

CUT FLOWERS.—The entries here far exceeded all previous numbers, and the section proved the outstanding feature of the show. The colouring of the blooms evoked warm praise from every side. Roses and Sweet Peas were the cream of the exhibits. Asters, Pelargoniums, Dahlias and Fuchsias were shown in perfect bloom and in great variety. Much interest was also taken in some beautiful Zinnias, which proved a great attraction and were much admired. For the best display of Sweet Peas on a table eight feet by six feet by two feet high, the entry from Rouken Vale, Downfield, (gr. Mr. George Reid), was deservedly first. The blooms were of great variety, fine colouring and splendid quality. The delightful manner in which the table was laid out added not a little to the success of the entry. Other leading honours in this section went to the gardens at Ochterlony (gr. Mr. G. Scott), Cortachy Castle (gr. Mr. J. McFadyen), Emslea (gr. Mr. J. Smart), Old Montrose (gr. Mr. Robert Duncan), The Bughties (gr. Mr. Martin Taylor), Lismore (gr. Mr. J. Dick), Alice Bank, Tayport (gr. Mr. F. Wheeler), and Rotheluan (gr. Mr. D. Dalrymple).

FRUIT.—Despite the fact that the season has in some respects not been too favourable to fruit cultivation, the entries here showed an increase. As may be supposed, small fruits were not so plentiful, but, taken all over, the quality was very good, and reflected the highest credit on all concerned. As of yore, the EARL OF STRATHMORE, Glamis Castle (gr. Mr. D. McInnes), had some remarkably fine entries of Grapes. Nothing finer has been seen in the north for many years, the beauty of the exhibit calling forth the highest encomiums from noted growers. The EARL OF AIRLIE, Cortachy Castle (gr. Mr. J. McFadyen) was also well represented in the section. LORD KINNAIRD, Rossie Priory (gr. Mr. J. Macgregor), staged some fine examples, while from Taypark (gr. Mr. J. A. Nicol), COLONEL TYRIE, St. Helens, (gr. Mr. T. Dobbie), Bean Manor, Woodhouse, Loughborough (gr. Mr. James Staward), Cambo, Kingsbarns (gr. Mr. John Laing), Inchmartin, Inchture (gr. Mr. James Benvie), Pitlithie, Leuchars (gr. Mr. M. McBride), to name only a few, came some very meritorious entries, which worthily gained for them leading places. That famous fruit-growing district, the Carse o' Gowrie, provided some outstanding collections of Apples.

VEGETABLES.—Seldom has a finer display

been made at Dundee than was the case in the vegetable section this year. Gardeners in the large area covered by the show not only know how to grow vegetables, but how to show them. One could not help admiring how well staged the collections were. There were fine Turnips, Onions, round and trim, and of large circumference; Carrots clean, free from greening and disease, and very shapely; Leeks, not too long in blanch, and well-blached; Beets, wonderfully finely grown; Cauliflowers, neither coarse nor rough, but fresh, uniform, and pearly white; Celery, large, perfectly solid, and thoroughly blached. These were the predominant features. For the best six varieties of Potatoes, LORD KINNAIRD, Rossie Priory (gr. Mr. J. Macgregor), worthily won the first prize, while Braefort, Carnoustie (gr. Mr. P. Kerr) led finely in the vegetable collections. Other leading exhibits came from Lismore, Cortachy Castle, Rotheluan, Bean Manor, Loughborough, Ochterlony, and Magic Wells, Balmullo.

AMATEURS.—Some highly creditable work was shown in the amateurs' classes, the leading honours, including the Corporation Challenge Cup, going to Mr. A. BATCHELOR, Lochee Road, Dundee. This gentleman has been an exhibitor at Dundee Shows for over forty years, and has many honours to his credit.

NON-COMPETITIVE EXHIBITS.—While the grand display in the competitive classes naturally attracted much attention, generous tributes cannot be withheld from the decorative exhibits staged by the leading firms. Gold Medals were awarded to Messrs. AUSTIN AND McASLAN, Glasgow; Messrs. W. P. LAIRD AND SINCLAIR, Dundee; Messrs. THYNE AND SON, Dundee; Messrs. HARLEY AND SON, Dundee; Messrs. STORRIE AND STORRIE, Glencarse; Messrs. D. AND W. CROLL, Dundee; CARSE OF GOWRIE NURSERY Co., Errol; and Messrs. JAMES LAURIE AND SON, Dundee.

ELGIN.

AUGUST 26.—As might be expected in the capital of the fair land of Moray, the Elgin Horticultural Association submitted to their friends and patrons on this date a magnificent display. There was a record number of entries, the organisation under Mr. T. L. Munn, president, and Mr. George Milne, secretary and treasurer, was admirable, and with the warm and hearty support of the many distinguished people now resident in this northern area at this most delectable period of the year in Scotland, the show proved highly successful. The Marchioness of Linlithgow, in the presence of a large company, performed the opening ceremony, and warmly congratulated all concerned on the very high standard achieved, and wished the best of good luck to the Elgin Horticultural Association in their future endeavours. There were in all five divisions, the Sweet Peas now being considered so important a part in flower shows as to constitute a division by themselves.

POT PLANTS.—The displays in this division were remarkably good, especially so in the classes for Fuchsias, Begonias and Adiantums. Great admiration was evoked for the *Petunias* from Braco Lodge, the *Begonias* and *Maidenhair Ferns* from Palmer's Cross, and the *Fuchsias* and *Ferns* from the Asylum. Mr. R. GORDON, Birch Cottage, carried off the medal given for the best plant in the show with a finely-grown, well-developed *Fuchsia*.

CUT FLOWERS.—The fine assortment of cut flowers shown was varied and striking, and the competition was remarkably keen. Brodie of Brodie, Brodie Castle (gr. Mr. T. Annand), showed some remarkably fine collections, including perennials. Mrs. THOMSON, of Burgie (gr. Mr. Ferguson), scored finely with Gladioli, while the magnificent double *Begonias* from Brodie Castle were noteworthy, as were also those from Palmer's Cross. The *Cactus Dahlias* from Craigendarroch, Buckie, were easily first. The Palmer's Cross (gr. Mr. Gardiner) *Pelargoniums* could not be surpassed, while

the Pansies from Mr. STRONACH, Keith, excelled. Some exceedingly fine Antirrhinums were shown from Darnaway Castle Gardens.

SWEET PEAS.—Never has a finer collection of Sweet Peas been seen in the north, their size, colour, and strength of bloom forming a great asset to the exhibition. Premier place for the best nine bunches of Sweet Peas, distinct varieties, deservedly went to Brodie Castle Gardens. It may be stated here that no fewer than six first prizes in the Sweet Pea classes went to Brodie Castle; Darnaway Castle (gr. Mr. Dow), Palmer's Cross (gr. Mr. Gardiner), and Moy House, Forres (gr. Mr. T. Stuart), did not lag far behind. From Burgie House (gr. Mr. Ferguson), came a delightful entry of six vases of *Grandiflora* (sweet scented) Sweet Peas which gained the silver vase presented by Mrs. Thomson, Burgie House, so that the vase went home to Burgie again.

FRUIT.—Brodie of Brodie here again secured premier place for the most points, the entries gaining the silver medal. Leading honours for Strawberries, Apricots and Plums also went to Brodie. Palmer's Cross (gr. Mr. T. C. Gardiner), led finely for Grapes and green Gooseberries, and for red and yellow Gooseberries first places went to Brodie Castle. Burgie House had the best Black Currants, and Darnaway Castle furnished the choicest Red Currants, Raspberries, and Worcester Pearmain Apples.

The outstanding prize of the show was the Mann Challenge Cup, presented by Mr. T. L. Mann, seedsman, Elgin, to the most successful competitor. Lord Provost Forsyth, in asking the Marchioness of Linlithgow to make the presentation, said the cup had been presented by Mr. T. L. Mann, the president of the Society, and it had been won by Mr. ANNAND, Brodie Castle Gardens. Mr. Annand had had the honour of winning the trophy no fewer than three times in succession, and it now became his own property. They were all pleased, said his lordship, that Mr. Annand had been so successful, as his name had always been well and favourably known as a successful gardener in and around Morayland. Mr. Annand secured the Challenge Cup, the Silver Medal had most points in the professional classes, and had most points in the fruit division. He also gained the National Sweet Pea Society's Silver Medal, thus rounding off a famous victory.

Amateurs, plottolders, etc., did splendidly, while mention must be made of the fine exhibit staged by Mr. Mann, Seedsman and Florist, Elgin. It was worthy of Mr. Mann's fine reputation, and worthily earned the warm expressions of admiration from the visitors. The Society awarded this exhibit a silver medal.

LEOMINSTER SHOW.

This show was held on August 28 and again proved attractive; it was attended by over six thousand visitors.

The horticultural section was contained in one large marquee, and consisted of over 800 entries. The principal prize winners in the open section were, for a group of flowering and foliage plants, the Hon. Mrs. R. DEVEREUX, Hampton Court (gr. Mr. G. H. Emmett) and Mrs. BRIGHT, Leominster; for hardy flowers: Major WARD JACKSON, Stretford (gr. Mr. Reeves), Sir CHAS. RUSHOUT, Mrs. SPENCE LYONSHALL, and Mrs. WYATT LUDLOW; for half-hardy flowers, Roses, etc.: Mrs. OLIVER, Kingston, Major PRESCOTT, Mr. G. PITT, Bishops Frome, Mr. BOVINGTON, Hearnor, Dr. MILNER, Major STEWART ROBINSON, The Ovals, and Mrs. HARVEY, Leominster. Decorative tables, baskets, etc., were a fine feature of the exhibition. The prize winners were Miss MONROW, Mrs. J. RADNOR, Mrs. E. A. BEAVEN, Lingen, Mrs. WYATT, and Mr. PANTALL.

The fruit classes are always a feature at this show and result in keen competition. The prize-winners included Mr. ROBERTS, Mr. H. GOSLING, Mr. A. P. THOMAS, Abergavenny, Mr. JOYCE, Hereford, Miss BERNARD, and Mr. C. W. POWELL.

Trade groups were displayed by KING'S ACRE NURSERY, Hereford, Messrs. JOHN WILSON, LTD., Hereford, Messrs. J. H. WHITE AND CO., Worcester, and Mr. E. J. PARSONS, Worcester.

ROYAL HORTICULTURAL.

SEPTEMBER 8.—The exhibits at the fortnightly meeting on Tuesday last were sufficient to fill the hall, and collectively they made a fine display. Three groups of Orchids were staged and several novelties, of which two received Awards of Merit.

Several groups of other flowers were displayed, including Roses, Dahlias, Carnations, Gladioli, and seasonable border flowers. The Floral Committee recommended four Awards of Merit to novelties.

The finest exhibit in the hall was seen in the Fruit and Vegetable section, and consisted of a magnificent collection of pot fruit trees and choice gathered fruits staged by Mr. J. C. ALLGROVE, for which the Committee recommended a Gold Medal, this being two consecutive occasions on which this high award has been won by Mr. ALLGROVE.

Special competitive classes for vegetables were held in conjunction with the fortnightly meeting, but the results were somewhat disappointing. Whilst some of the produce staged was of excellent quality, competition was not so keen in certain of the classes as could be wished, and many did not seem to be aware that such an exhibition had been arranged.

Orchid Committee.

Present:—Sir J. Colman, Bart., (Chairman) Messrs. Gurney Wilson (Secretary), H. T. Pitt, A. Dye, H. H. Smith, H. G. Alexander, J. E. Shill, W. H. Hatcher, J. Cowan, T. Armstrong, E. R. Ashton, R. Thwaites, and Stuart H. Low.

AWARDS OF MERIT.

Odontoglossum Enchantress.—The plant bore a spike of eleven very large flowers of beautiful shape, heavily barred with maroon-purple, and with almost white tips to the segments, showing just a suffusion of the purple from the under surface. The lip is white in the lower half and beautifully spotted and marked with maroon purple, the gold banding beneath the column giving further attraction to the flower. Exhibited by E. R. ASHTON, Esq.

Laelio-Cattleya Senator var. *Titanic*.—(L.-C. H. T. Pitt × C. Tityus). A magnificent flower of large size, with sepals and petals coloured rosy-purple, the petals being broad and beautifully frimbriated at the edges. The lip is ruby-purple, with a few lighter veins at the base, and with two yellow blotches, one on either side of the entrance of the throat. Exhibited by Messrs. BLACK AND FLORY.

GROUPS.

H. T. PITT, Esq., Rosslyn, Stamford Hill, showed a very interesting group of various Orchids in bloom, notable examples being *Odontoglossum crispum* xanthotes, *Miltonia William Pitt* var. *Mars*, the white *Cypripedium Boltonii*, *C. Wottonii*, *C. Charles Canham*, *C. Maudiae*, *C. Baron Schröder* var. *Ardens*, *Coelogyne Veitchii*, *Brasso-Laelia Thwaitesii*, the rare *Maxillaria diacrypta* and *Angraecum Scottianum*.

MESSRS. SANDERS put up a very extensive exhibit daintily arranged with *Arundinarias* and *Adiantum* Ferns as foils. The centrepiece was a fine specimen of *Stanhopea insignis* with three inflorescences of the honey-yellow flowers. On either side and in other parts of the group were good spikes of *Vanda coerulea*, whilst other interesting plants were *Cattleya* Mrs. Gratrix, *C. Hardyana* alba, *Oncidium Forbesii*, *Dendrobium Victoria Reginae* var. *atro-coerulea*, *Angraecum Scottianum*, choice *Cattleyas*, *Brasso-Cattleyas* and *Laelio-Cattleyas*.

MESSRS. STUART LOW AND CO., showed some very excellent *Cattleyas*, *Brasso-Cattleyas* and *Laelio-Cattleyas*, including B.-C. *Olympus*, and a fine form of *Cattleya Hardyana*. Others especially good were *Brasso-Cattleya Rosita*, *Cattleya Coronet*, two excellent plants of *C. Gaskelliana* alba, and *Cypripedium macrochilum giganteum*. Overhanging the exhibit was a fine spike of *Odontioda* with claret coloured flowers.

Floral Committee.

Present: (Section A). Messrs. Henry B. May (in the Chair), J. F. McLeod, A. Turner, H. J. Jones, J. M. Bridgeford, D. Ingamells,

F. G. Cousins, F. Streeter, James B. Riding, Wm. Howe, D. B. Crane, and Chas. E. Pearson. (Section B.)—Messrs. Chas. T. Musgrave (in the chair), G. W. Loder, James Hudson, G. Reuthe, W. B. Cranfield, Reginald Cory, F. G. Preston, E. H. Wilding, R. C. Nottcutt, W. G. Baker, Amos Perry, W. J. Bean, and Sir William Lawrence.

AWARDS OF MERIT.

Chrysanthemum Cranford.—A small-flowered Japanese variety of good yellow colour, which is effective when grown without being disbudded. Shown by Mr. W. A. ROOTS.

Gladiolus Tess.—A delicately-beautiful large-flowered variety of excellent form. The flowers are shaded with soft rosy-mauve colour, and have a creamy Primrose bar on the lower segments. Shown by THE ORPINGTON NURSERIES.

Hermannia candicans.—This is a variable species found in South Africa and its interest is botanical rather than horticultural. The small branches shown were rather scrubby, bearing obovate, nearly entire leaves, and small, pendulous, yellowish flowers. Shown by SIR WILLIAM LAWRENCE.

Indigofera pendula.—The shrub shown under this name is somewhat like the well-known *Indigofera Gerardiana* but of less garden value. The leaves are larger and the fewer racemes of flower are longer and pendulous. Shown by REGINALD CORY, Esq.

NEW DAHLIAS.

The following seedling Dahlias, shown by Mr. A. J. COBB, were selected for trial at Wisley.

Charles E. Pearson.—A very dwarf miniature Pacony-flowered variety which bears rounded flowers made up of cupped florets of orange-scarlet colour.

Lulu.—A star-like, dwarf, miniature Pacony-flowered Dahlia of rosy-mauve colour, with an irregular zone of crimson-ecrise.

GROUPS.

In view of the show of the National Dahlia Society on the morrow, Dahlias were prominently shown by half-a-dozen or so exhibitors, but as these were "to stand over" we reserve our remarks for our report on the Dahlia Show.

Gladiolus again formed an important feature of the floral exhibits. Near the gallery, Messrs. R. H. BATH, Ltd., set up a fine collection which included, amongst their large-flowered sorts, *Sapho*, a fascinating slaty-puce variety; *Romance*, orange-yellow shaded with puce; *Bleriot*, vivid orange with a crimson blotch; *Rose Ash*, Red Emperor, and *Love's Fire*, of gorgeous colouring.

Another exceeding good collection was staged by the ORPINGTON NURSERIES Co. Gerna, a large, deep primrose variety; *Cris*, with crimson-maroon flowers; *Duchess of York*, a beautiful blue and purple variety, and *Red Emperor* of the large-flowered type were excellent. They also showed many good seedlings and *Primulus* hybrids. Of the latter type *Orange Queen* was especially effective.

In a noteworthy collection of Gladioli, Mr. ALFRED EDWARDS showed *Field Mouse*, *Admiral Beatty*, *Red Emperor*, and many good *Primulus* varieties.

Roses were also very attractive. Messrs. CHAPLIN BROS. had an effective collection of K. of K., *Innocence*, *Mabel Morse*, *Golden Emblem*, *Emma Wright*, and many other good garden varieties. *Marcia Stanhope* was prominent in Mr. GEORGE LILLEY's display, and he also included *Madame Edouard Herriot*, and *La Tosca*.

Under the clock, Messrs. WHEATCROFT BROS. set up goodly vases of *Betty*, *Lady Inchiquin*, *Golden Emblem*, *Col. Oswald Fitzgerald*, and many other popular sorts. Amongst a display by the Rev. J. H. PEMBERTON we noted *Annie*, deep pink; *Bertha Turner*, of a paler shade; *Ruth* and *Los Angeles*.

Carnations were well-shown by Mr. C. ENGELMANN, who staged good vases of *Laddie*, *Red Laddie*, *Dainty* and *Betty Low*, while Messrs. ALLWOOD BROS., had rather a smaller collection of good sorts with a selection of their *Dianthus Allwoodii*.

In a corner group, Mr. L. R. RUSSELL displayed many very good Clematis in small pots. The principal sorts were Crimson King, Jackmanii superba, The Gem, and Mrs. George Jackman. He also had a good collection of Canas and some Japanese Maples.

Some exceedingly vigorous stems of Liliun tigrinum splendens grandiflora were staged by Messrs. R. GILL AND SON. An accompanying note stated that in their nursery this showy Liliun had grown as high as fifteen feet, bearing thirty-eight flowers. Magnificent spikes of Kniphofia Mount Etna, and a good selection of Scabious were shown by Messrs. ISAAC HOUSE AND SONS.

A particularly good collection of Violas was contributed by Mr. W. YANDELL. This was very comprehensive and we especially admired Mrs. Robinson, of lilac shades of colour, Oxhill Purple, Primrose Dame, Queen of Whites, and Archibald Grant, blue.

The largest collection of border flowers was arranged by Messrs. B. LADHAMS, Ltd., who included many tall Lobelias. The chief were B. Ladhams, scarlet; Carminous, pale carmine; Blue Bird and Shirley Beauty, crimson. Coreopsis auriculata superba, Polygonum Bistorta, and P. atrosanguinea were also of interest.

Astilbe Granet, of rich colour, was very prominent in the collection of general border flowers staged by Messrs. M. PRICHARD AND SONS, who also included the old favourite Verbena venosa, Gaura Lindheimeri, various herbaceous Phloxes, Kniphofia Star of Baden, a large spike of pale orange colour, and the smaller, brightly-coloured Royal Standard.

The small, but very effective, Aster luteus was displayed by Mr. F. G. WOOD in an interesting collection of hardy flowers. Pentstemons were shown in good variety, as also were herbaceous Phloxes, with Liatris spicata and Michaelmas Daisies.

A large collection of secondary spikes of Delphiniums, Sunflowers, Gaillardias, and garden Pinks was arranged by Mr. T. CARLILE. Rudbeckia Herbstonne, shown by the CHALK HILLS NURSERIES, was especially effective. Coreopsis grandiflora, herbaceous Phloxes in variety, Heleniums and Michaelmas Daisies of good quality were also shown.

Fruit and Vegetable Committee.

Present.—Messrs. C. G. A. Nix (Chairman), J. Cheal, W. Poupert, H. S. Rivers, S. B. Dicks, J. Harrison, J. C. Allgrove, Geo. F. Tinley, T. Pateman, A. W. Metcalfe, J. Wilson, A. C. Smith, E. Neal, G. Kelf, W. H. Divers, E. A. Bunyard, H. Markham, and A. N. Rawes.

The only exhibit before the Committee was an Apple named Beely Pippin, from the Wisley Gardens, where it had been sent for trial by the Rev. Sculthope, Weston-super-Mare. It is a very handsome Apple, of even contour, but the flavour is poor.

GROUPS.

Mr. J. C. ALLGROVE, Middle Green Nursery, Langley, Slough, staged one of the finest exhibits of pot trees we have seen in the Hall for many years past. The trees were all grand specimens and splendidly cropped. An espalier of Coe's Violet Plum was one of the best specimens of this form of tree we have seen exhibited and the crop was a most remarkable one.

There were also espaliers of Nectarine Pine Apple, and Morello Cherry, these forming the background. The Plums included Coe's Violet, Late Orange, Allgrove's Superb, Jefferson, Giant Prune, and Wydale. Excellent Apples were shown in the varieties Calville des Femmes, —one tree of this variety was covered with fruits from top to bottom: Ontario, Cox's Orange Pippin, and Chas. Ross. Trees of Peach Diamond were unusually good. A fine selection of gathered fruits, arranged along the front of the exhibit, included Plums, Pears and Apples.

Messrs. T. RIVERS AND SON also showed fruit trees, and they were spaced sufficiently far apart to admit of visitors walking amongst them, but we think this thin spacing detracted from the general effect. There were Plums, Peaches, Figs, Apples and Nectarines: trees of President and Coe's Golden Drop Plums, Sea Eagle and Thos. Rivers Peaches; and Apples

Peasgood's Nonsuch, Gascoyne's Scarlet Seedling and Worcester Pearmain were all cropped splendidly.

Mr. H. HEMSLEY, Crawley, showed thirty dishes of Apples, Plums, and Damsons. The fruits were good representative examples of such popular sorts of Apples as Lady Henniker, Allington Pippin, Chas. Ross, Lord Derby, Gloria Mundi, Emperor Alexander, and Lady Sudeley. Plums, Pond's Seedling and Late Orange were remarkably good.

Competitive Vegetable Classes.

In the class for a collection of twelve distinct kinds to be selected from a list in the Schedule, there were three exhibits, and each one was of outstanding quality. The first prize was awarded to Mrs. JENNER, Wenvoe Castle, Cardiff (gr. Mr. H. Wheeler), whose finest vegetables were Cauliflowers Standwell, Onions Premier, Carrots Perfection. Potatos Arran Comrade, and Beets. The second prize was won by VISCOUNT HAMBLEDEN, Greenlands, Henley-on-Thames (gr. Mr. W. Turnham), whose Celery Superb Pink, Onions Ailsa Craig, Potatos The Bishop, and Parsnips Tender and True, were outstandingly good. The third prize went to Sir JOSEPH TICHBORNE, Bart., Tichborne Park, Alresford, Hants. (gr. Mr. C. Goodchild).

In the smaller class for nine distinct kinds the only exhibit was shown by R. CHETWYND-STAPYLTON, Esq., Great Berkhamsted, Herts (gr. Mr. W. Meager), who exhibited Cauliflower Autumn Giant, Celery Giant Pink, Carrot Champion Horn, Brussels Sprouts Dwarf Gem, Onion Ailsa Craig, Bean Majestic, Tomato Sunrise, Pea Late Duke, and Potato The Bishop.

A better competition resulted in the class for six distinct kinds, and amongst five excellent exhibits the first prize was awarded to R. H. LING, Esq., The Braes, Berkhamsted (gr. Mr. D. W. Bedford), who showed Cauliflower Autumn Giant, Celery Aldenham Pink, Potato Arran Comrade, Onion Ailsa Craig, Tomato March Beauty, and Pea Lord Chancellor. The second prize went to J. DAY, Esq., Berkhamsted, whose Onions Ailsa Craig, Potatos The Bishop, and Cauliflower Autumn Giant were excellent. The third prize was won by H. W. HENDERSON, Esq., West Woodhay House, Newbury (gr. Mr. F. L. Pike).

In Class 4, for a collection of twelve varieties of Potatos distinct, there were five competitors. The first prize was awarded to G. THORN, Esq., Sprotlands, Wellsborough, Kent (gr. Mr. M. Hoad), for an excellent exhibit of even, shapely tubers with scarcely a blemish, and all evenly matched. Some of his more notable varieties were Majestic, The Bishop, Factor, and Witch-Hill. The second prize was gained by Mr. H. W. HENDERSON, and amongst his exhibits were several coloured sorts, King Edward being especially good, and also Red King, and Di Vernon, though perhaps his finest dishes were Arran Comrade and Majestic. The third prize was awarded to Mr. R. H. LING, who had a specially fine dish of the variety Renown.

In the smaller Potato class for six immune varieties, distinct, there were eight entries and VISCOUNT HAMBLEDEN was easily first. He showed Mr. Bresse, Arran Rose, Majestic, Nitsdale, Arran Comrade, Abundance. The second prize went to Mr. H. W. HENDERSON, of whose dishes Majestic, and Di Vernon were his best. The third prize was awarded to F. HEAD, Esq., Willisborough, Ashford, Kent, whose tubers, though on the small side, were of exceptional quality.

In the class for a collection of six varieties of Onions, distinct, VISCOUNT HAMBLEDEN was awarded first prize for fine bulbs of Blood Red, Globe, Cranston's Excelsior, Improved Reading, Ailsa Craig, and Silver Globe. The second prize was secured by Mr. H. W. HENDERSON for Blood Red, Carter's Pearl Pickler, Bedfordshire Champion, Rousham Park Hero, Carter's Record, and Ailsa Craig. The third prize was won by Mr. R. CHETWYND-STAPYLTON. By far the best entry in this class was that of Mrs. JENNER, which was disqualified because the varieties were not named.

There were only two entries in the class for a collection of six distinct kinds of salad vegetables, each staged separately. VISCOUNT HAMBLEDEN was awarded the first prize for Tomatos Best of All, Lettuces Ideal, Cucumbers Delicacy, White Mustard, Curled Cress, Celery Solid White, and Black Beet. R. CHETWYND-STAPYLTON, Esq., was awarded the second prize for an exhibit which included Batavian Endive.

SINGLE DISH CLASSES.—There were fourteen entries in the class for Scarlet Runners; the first prize was awarded to EARL BEATTY, Reigate Priory, Surrey (gr. Mr. A. J. Barrett) who showed Best of All. Mr. H. W. HENDERSON secured the second prize with Scarlet Emperor, and Mr. W. H. TYZACK, High Wycombe, was third with Prizewinner.

Mrs. JENNER, who showed Princess of Wales, was the only entrant in the class for French Climbing Beans, and was awarded the first prize.

VISCOUNT HAMBLEDEN was placed first in the class for French Beans, with the variety Premier, being the best of five entries.

Mr. G. THORN was awarded the first prize for Globe Beet amongst six entries, with Crimson Bell, and Mrs. JENNER was first for long Beet with Black variety. Mrs. JENNER also secured the first prize for Brussels Sprouts with the variety Exhibition. Mrs. AUSTIN showed the best Cabbages in Hartwell, and Mrs. JENNER the best Savoys in Perfection, whilst Sir JOSEPH TICHBORNE'S Autumn Mammoth Cauliflowers were the best of a very poor class.

In the Celery classes Mrs. AUSTIN showed the best white variety in Solid Ivory, and Sir JOSEPH TICHBORNE the best red in Dwarf Prize Red.

VISCOUNT HAMBLEDEN had much the finest Leeks in the variety Acquisition, and Mr. CHETWYND-STAPYLTON showed the best three Marrows. In the class for Onions Mr. J. DAY excelled with Ailsa Craig, and VISCOUNT HAMBLEDEN was second with Premier.

The Rev. J. DAVIES, Crowle Vicarage, Worcester, was awarded first prize for Parsnips with very long specimens of Tender and True, and he also had an easy win in the class for long Carrots, showing New Red Intermediate, in which latter class the EARL OF ANCASTER was second. The best Peas were from VISCOUNT HAMBLEDEN'S gardens, the variety being Duke of Albany.

Mr. F. HEAD had some excellent tubers in the class for white Potatos, in which Mr. J. DAY was second. The finest coloured Potatos were King Edward, shown by Mr. W. H. HENDERSON; Red King, shown by Sir JOSEPH TICHBORNE, were second.

Mr. A. PRIOR, New House Gardens, Caterham, excelled for red Tomatos, and the EARL OF ANCASTER for yellow Tomatos.

In the class for any other vegetables Ideal Lettuces shown by Mr. J. DAY were placed first in a poor competition.

SANDY AND DISTRICT HORTICULTURAL

AUGUST 27.—This Society held its fifty-second show in the grounds of Sandye Place by kind permission of Mrs. Graves. During the early part of Thursday morning rain fell heavily, but before noon the weather improved greatly, and with the sun shining at intervals during the afternoon, big crowds visited the horticultural and other exhibits, and enjoyed the music of the massed bands of H.M. Irish Guards and the 1st and 2nd Life Guards.

The exhibits in the horticultural section, notwithstanding the variable season, included some very choice fruit and vegetables. The class for a group of flowers arranged for effect in a space of twenty feet by eight feet to be shown on the floor, attracted only two exhibits, but both were good. The first prize was awarded to Messrs. F. CHILLEY AND SON, Hunts, and the second to Mr. F. W. FORSYTH, Luton, Beds.

MESSRS. HARKNESS AND CO., Hitchin, were deservedly awarded the first prize for a group of Roses arranged for effect. The Roses especially admired were Betty Upchurch, Mabel Morse, K. of K., Roosier Beauty, and

Golden Emblem. Mr. J. Pigg, Royston, was second. Messrs. HARKNESS AND CO. also excelled in the class for forty-eight cut Roses with a very fine exhibit. In the class for eighteen Tea Roses Mr. J. Pigg won the first prize easily. Gladioli were shown well, and in a class calling for twenty-four spikes, Mr. W. KITCHNER, Hitchin, was awarded the first prize.

Dahlias are always a feature at Sandy, and several classes are provided for their display. For a collection of Dahlias staged on tabling for effect, Messrs. J. CHEAL AND SONS, Crawley, were deservedly awarded the first prize. The quality of the flowers was of a very high standard and the exhibit was most tastefully staged. The same competitors excelled for twelve bunches of Cactus Dahlias, but in the class for twenty-four show or fancy Dahlias, Mr. R. C. UNWIN, Histon, was first, and for twelve pompons, Mr. A. T. BARNES, Bedford, excelled.

Large Gold Medals were awarded to Messrs. LANTON BROS., Bedford, for a fine display of fruit, and to Messrs. W. and J. BROWN, Peterborough. Messrs. DANIELS BROS., Norwich, were awarded a Gold Medal for Gladioli.

In the competitive class for a collection of hardy fruits in ten varieties, Sir CHARLES NALL-CAIN, Brocket Hall, Hatfield (gr. Mr. T. Pateman), was first. The EARL OF SANDWICH, Huntingdon (gr. Mr. Prowting), second, and F. FRANCIS, Esq., (gr. Mr. Gillings), third.

In the section Open to All (except nurserymen), competition was keen. For a collection of ripe dessert fruits (six dishes) Sir CHARLES NALL-CAIN was awarded the first prize, the EARL OF SANDWICH, second, and F. FRANCIS, Esq., third. The first prize winner in this class was also awarded first for the following: (a) two bunches of Muscats, (b) two bunches of any other white Grape, (c) Apples, (d) Cherries, (e) Melons, (f) Peaches. F. FRANCIS, Esq., was awarded the first prize for two bunches of Black Hamburgh, and for any other black Grape, while the EARL OF SANDWICH won several first prizes in the single dish classes for fruit. For a collection of nine vegetables, distinct, seven competed. The first prize was awarded to A. A. ALLEN, Esq. (gr. Mr. Blackenway), who staged fine produce. Sir CHARLES NALL-CAIN followed closely. The latter exhibitor showed successfully in the single dish class, taking five first and three second prizes.

Excellent vegetables and fruits were again staged in the Cottagers' section, Mr. J. B. ROBINSON, Great Barford, being the most successful exhibitor.

The Market Gardeners' section provided some very fine exhibits, and great credit is due to the exhibitors for the way in which they displayed their very fine produce. Especially notable were the Carrots, Potatoes, and collections of vegetables. The most successful exhibitors were Mr. GEO. TRUIN, Sandy, and the EXORS. of Mr. J. N. HALL.

DYSART HORTICULTURAL.

THE annual show of the Dysart Horticultural Society, held at the Three Trees Park on August 8, was a great success in all respects, the entries being more numerous and the quality of flowers and vegetables excellent. In the Pose class, open to nurserymen and gardeners, the Wishart Bowl was won by Mr. JOHN PEARSON, Minathorp. In the Amateur Section the Corporation Medal was awarded to Mr. L. BLACK, Kinglassie, and the chief honours in the Sweet Pea classes were secured by Mr. J. LATIMER, Thornton.

TRADE NOTE.

A HANDY little folder has just been circulated by Messrs. Joseph Fison and Co., which contains, in a small compass, particulars of fertilizers for different flowers, fruits and vegetables, with brief cultural details and recommended proportions of the particular chemical manure which is advised for each.

MARKETS.

COVENT GARDEN, Tuesday, September 8th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Hydrangea	s. d. s. d.
cuneatum	per doz. ... 10 0-13 0	white, 48's per	doz. ... 18 0-30 0
elegans	per doz. ... 10 0-12 0	pink, 48's per	doz. ... 18 0-24 0
Aralia Sieboldii	9 0-10 0	blue, 48's per	doz. ... 30 0-48 0
Araucarias, per	doz. ... 30 0-42 0	Nephrolepis	in
Asparagus plu-	mosus ... 12 0-18 0	variety ...	12 0-18 0
—Sprengeri	12 0-18 0	—32's	24 0-36 0
Aspidistra, green	30 0-60 0	Palms, Kentia	30 0-48 0
Asplenium, per	doz. ... 12 0-18 0	—60's	15 0-18 0
—32's	24 0-30 0	Pteris, in variety	10 0-15 0
—nidus	12 0-15 0	—large 60's	5 0-0 0
Cacti, per tray,	—12's, 15's ... 5 0-7 0	—small	4 0-5 0
Crotons, per doz.	30 0-45 0	—72's per tray	of 15's ... 2 6-3 0
Cyrtomium	10 0-25 0	Viscarias, 48's	per doz. ... 15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

Adiantum deco-	s. d. s. d.	Heather, white,	s. d. s. d.
rum, doz. bun.	9 0-10 0	per doz. bun.	10 0-12 0
—cuneatum, per	doz. bun. ... 6 0-8 0	—pink, per doz.	bun. ... 8 0-9 0
Asparagus plu-	mosus, per bun.	Honesty, per doz.	bun. ... 18 0-30 0
long trails, 6's	2 0-3 0	Lapagerias, per	doz. blooms ... 3 6-4 0
med. sprays ...	1 6-2 6	Lilium longiflorum	long, per doz. ... 3 0-4 0
short ...	0 9-1 3	—speciosum	album, long, per
—Sprengeri, per bun.	long sprays ... 1 6-2 0	doz. ...	3 0-3 6
—long sprays ...	1 0-1 6	—short, per doz.	2 6-3 6
med. " ...	0 4-1 0	—speciosum	rubrum, long,
short " ...	0 4-1 0	per doz. blooms	2 0-2 6
Asters, white, per	doz. bun. ... 4 0-6 0	—short	1 6-2 0
—coloured, per	doz. bun. ... 4 0-6 0	Lily-of-the-Valley,	per doz. bun. ... 3 0-3 6
Carnations, per	doz. blooms ... 2 6-3 6	Montbretia, per	doz. bun. ... 4 0-6 0
Chrysanthemum	maximum, doz.	Oreids, per doz.	—Cattleyas ... 36 0-48 0
bun. ...	2 6-3 0	—Cypripediums	5 0-7 0
Chrysanthemums	—white, per doz.	Physalis, per doz.	bun. ... 18 0-30 0
blooms ...	4 0-6 0	Roses, per doz.	blooms, Rich-
—bronze, per doz.	blooms ... 2 0-4 0	mond ...	2 0-3 6
—bronze, per doz.	bun. ... 12 0-18 0	—Liberty ...	2 0-3 6
—yellow, per doz.	blooms ... 4 0-6 0	—Madame Butter-	fly ... 2 0-3 6
bun. ...	12 0-15 0	—M-me. A bel	Chatenay ... 2 0-2 6
Coreopsis, per doz.	bun. ... 1 3-1 6	—Melody ...	1 6-2 0
Cornflowers per	doz. bun. ... 2 0-2 6	—Molly Sharman	Crawford ... 2 6-3 6
Croton leaves	per doz. ... 0 9-2 6	—Opheila ...	2 6-3 6
Delphiniums, var-	ious, per doz.	—Sunburst ...	2 0-3 0
spikes ...	3 0-4 0	Scabiosa caucas-	ica, per doz.
Fern, French, per	doz. bun. ... —	bun. ...	4 0-5 0
Gaillardia, per	doz. bun. ... 2 6-3 0	Smilax, per doz.	trails ... 3 0-3 6
Gardenias, per	box, 12's, 18's ... 4 0-5 0	Statice, mauve	5 0-6 0
Gladioli, white,	per doz. bun. ... 12 0-15 0	—yellow, per doz.	bun. ... 5 0-6 0
—primulinus, per	doz. spikes ... 1 6-2 6	—white, per doz.	bun. ... 5 0-6 0
—Halley, per doz.	spikes ... 1 0-1 6	—pink, per doz.	bun. ... 5 0-6 0
—Prince of Wales	per doz. spikes	—latifolia, per	doz. bun. ... 10 0-12 0
—scarlet, per doz.	spikes ... 2 0-3 0	—Incana, per doz.	bun. ... 9 0-12 0
—cream, per doz.	spikes ... 2 0-3 0	Stephanotis, per	72 pips ... 3 0-3 6
—Giant White,	per doz. spikes	Stock, English	white ... 6 0-8 0
Gypsophila panic-	ulata, double,	Sultan, white, per	doz. bun. ... 4 0-6 0
per doz. bun. ...	18 0-24 0	—mauve, per doz.	bun. ... 4 0-6 0
		—yellow, per doz.	bun. ... 5 0-6 0
		Sweet Peas, per	doz. bun. ... 4 0-9 0
		Violas, per doz. bun.	1 0-1 6

REMARKS.—Hardy herbaceous flowers continue to arrive in considerable quantities although, owing to the uncertain weather, most of the blooms are of second-grade quality and do not find purchasers. This is most noticeable with Asters, Gladioli and Statice. The prices for best quality Carnations have been on the up grade this past week. Roses also are dearer. Chrysanthemums, both bunch and blooms, are improving in quality and some are very good. Physalis Franchetii

is obtainable in fine spikes. Lilium longiflorum was enquired for in vain after an early hour this morning. Tuesday. This flower has advanced 1/- or more per bunch.

Fruit: Average Wholesale Prices.

Apples, English,	s. d. s. d.	Melons (Forced)	s. d. s. d.
per 4 sieve—		basket ...	15 0-18 0
—James Grieve ...	2 0-4 0	—Cantaloupes ...	3 0-8 0
—Lady Sudeley ...	2 6-3 6	—Valencia, per	case ... 14 0-15 0
—Miller's Seedling ...	2 0-6 0	Nectarines, per	doz. ... 6 0-18 0
—Quarrenden ...	3 0-5 0	—South African,	per case ... 20 0 25 0
—Worcesters ...	3 0-7 0	Oranges, South African—	
Apples, Cooking—		—Naatges per tray	3 0-4 0
—large ...	4 0-5 0	—Naval ...	18 0-24 0
—others ...	2 0-3 0	—Seedless ...	18 0-22 0
Bananas ...	15 0-25 0	Peaches, English	per doz. ... 6 0-18 0
Blackberries—		Pears, Williams,	bon Chrétien,
—cultivated, per lb.	0 6-0 8	per doz. ...	2 0-4 0
—wild, per lb. ...	0 3-0 4	—Fertility, per 4	sieve ... 9 0-10 0
Cobnuts, per lb. ...	0 10-1 0	—Dr. Jules Guyot,	per 4 sieve ... 10 0-12 0
Grapes—		—Hessel, per 4	sieve ... 8 0-9 0
—Belgian, Alicante	1 0-1 6	Californian—	
—English ...	1 3-2 0	—Bartlett ...	32 6-35 0
—Colmar ...	1 0-3 0	—Beurre Hardy	29 0-32 6
—Hamburgh, lb.	1 3-1 9	Plums, English	
—Muscat ...	2 6-5 0	—Monarch ...	9 0-12 0
—Canon Hall ...	2 6-3 0	—Pond's Seedling	9 0-14 0
Grape Fruit,		—Victoria ...	10 0-14 0
—South African,	per case ... 30 0-37 6	Damsons ...	10 0-12 0
Lemons, Messina,	per box ... 12 0-18 0	—Bush ...	5 0-6 0
—Murcia ...	12 0-16 0		
—Naples ...	26 0-30 0		

REMARKS.—Trade conditions are not brisk and there is plenty of room for improvement. English Apples are plentiful and cheap. Abundant supplies of Worcester Pearmain are available at comparatively low prices. Large cooking Apples are selling very slowly although their prices are not high. Pears are scarce and dear. Plums are a good trade. Monarch, Pond's Seedling, Damsons and Bush all selling freely at satisfactory prices. Choice fruits, such as Peaches, Nectarines, Grapes and Melons are a quiet business. Tomatoes are fairly plentiful and have recovered slightly in value owing to the poor demand last week. The Cucumber trade shows some variation and is a little unsteady. A quantity of Cob Nuts is arriving, for which there is a good demand. Plentiful supplies of Blackberries are coming to hand. Green vegetables are meeting a fair demand and salads are a brisk business. The Potato trade is quiet.

GLASGOW.

THE improvement which began in the closing days of August was well maintained during the past week, and in some things a further recovery in prices was recorded. Ophelia and Madame Butterfly Roses were dearer, realising from 2 6 to 3 3 per dozen. Madame Abel Chatenay was worth 2 6 to 3, Mrs. H. Stevens and Richmond, 1/- to 1 6. Asters were in plentiful supply, and while the average over the week was from 1d. to 4d. per bunch, a consignment of special quality blooms, of pink colour, sold up to 7d. on Friday. Carnations ranged from 1 6 to 1 9, all colours; Stocks 4d. to 6d.; Sweet Peas, ordinary, 1d. to 3d. specials up to 6d.; and Gypsophila paniculata, 3d. to 6d. Liliums were difficult to move and in consequence L. longiflorum (Harrisii) was obtainable from 1 9 to 2 6, and L. lancifolium rubrum from 1 9 to 2 3. Firm prices were obtained for Chrysanthemums. White Sanctity realised from 1/- to 1 6 per 6's; New Bronze and Hollot Yellow, 1 3 to 1 4; Mercedes, 1 2 to 1 4; Loan's Pink and Loan's Crimson, 6d. to 9d.; and small Helms's White, 2d. to 4d. Good Gladioli were worth from 2d. to 3 4d. per spike, and locally-grown, short specimens from 1/- to 2/- per dozen. Montbretia obtained 3d.; Smilax, 1 3 to 1 6; Asparagus small, 4d. to 8d.; and large 9d. to 1/-.

Plums were again a feature of the fruit market, but supplies were irregular, being scarce one day and plentiful the next. Friday's values, which are a fair index for the week, were as follow:—Victoria, Scotch, 9d. per lb.; English, 8d.; Cox's Late Red and Pond's Seedling, 6d.; Golden Drop and Monarch, 5d.; Czar, 4d. to 5d.; Scotch Egg, 4d.; Gisborne, 3d.; Switzens, 5/- sieve; Bush Plums, 8/-; Prune Damsons, 10d.; Damoscenes, 5d.; and French Gages, 10/- to 14/- crate. Black Hamburgh Grapes declined in value, English-grown selling from 1 3 to 1 6 per lb.; Scotch, 1 2 to 1 6, and Dutch, 1 2; while Muscats were firm at 3 6 to 4/- and Algeria Grapes fluctuated between 2/- and 2 3 per barrel. Pears kept steady, although the quality of certain brands has suffered in transit. French Williams's bon Chrétien made 16/- to 17/-; Californian Beurre Hardy, 16/-; Bartlett, 10/- to 12/-; and Eureka, 17 6 to 19/- Imports of American Apples are increasing, but the quality leaves much to be desired. Bonhams are worth about 42/- per barrel; Wealthy, 32/- to 35/-; and Duchess, 32/- to 36/-; and Gravenstein 20/- to 23/- per case; English-grown Bramley's Seedling ranged from 14/- to 16/-; and Stirling Castle 16/- to 18/-; Grape Fruit made 36/-; African Oranges, 26/-; and bronze Melons, 14/- to 16/- per case.

The colder weather has checked the consumption of Tomatoes and prices were generally easier. Scotch-grown samples being worth about 6d. to 7d. per lb. Jersey, 3 4d., Dutch, 2 4d., and Guernsey, 4d. Lettuces are plentiful at 1/- to 2/- per dozen. Cucumbers remained steady from 2 6 to 5/- per doz., and Marrows realised 3/- to 5/-.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—We learn that the Gold Medal awarded to Messrs. Blackmore and Langdon at the Southport Show was for a non-competitive group of Delphiniums and not for Begonias as stated in our report.

ARUM TUBERS ROTTING. *P. A. W.* (1) The cause of soft rot in the tubers of Arum Lilies is a minute organism named *Bacillus aroideae*. The bacillus is favoured by a high temperature, a moist atmosphere, and by too much feeding with nitrogenous manures, such as nitrate of soda, sulphate of ammonia, guano, fish manure, etc. Weak liquid manure is safest. (2) Toppotting and repotting tubers that are started into growth do not afford much scope for dealing with the disease, owing to the presence of young roots which would be liable to injury, or to be cut away. Since the plants are started in pots, the best thing to do would be to shake away the soil sufficiently to see if any of the tubers are rotting. Cut off such diseased portion, preserving as many healthy roots as possible. Dip the wound into Bordeaux mixture or a red solution of permanganate of potash or Condy's fluid. This should have been done after the foliage died away, when the whole tuber could have been immersed in either of the above fungicides. Reject very bad tubers and burn them in the furnace. When the re-potting is completed the pots should be put in a cold frame where they may be protected from rain, but ventilated. Last year's rains may have been the cause of the trouble. Select the more forward tubers for early flowers, when you place them in heat. A night temperature of 50° would be safer than a higher one. A good plan is to plant the tubers in shallow trenches, so soon as the foliage has died away and give water so soon as they commence growing. The plants should be repotted by the middle of September, and placed indoors. They should commence flowering long before Christmas, without hard forcing.

BEGONIAS FAILING. *R. G.* The Begonias have been badly attacked by what is known as rust. It is not a disease caused by a fungus, but is due to the action of a small, colourless mite (*Tarsonymus*). This occurs during April, May and June, when the leaves are young, and the weather commencing to get warm. The mite has mostly left the foliage, which is ruined for this season. The plants in the beds were attacked before they were put out, and nothing will save them now, though the tubers will be good enough next year. The remedy you have been using contains copper sulphate, a first-class fungicide. It would be well to get a stock of Campbell's fumigating insecticide from Mr. J. D. Campbell, Lund Street, Cornbrook, Manchester, and use it at the strength recommended with the insecticide. State that it is intended for Begonia mite when ordering. The winter-flowering Begonias may be sprayed now in the hope of getting healthy cuttings from them in spring; also any other evergreen ones you may have. Next spring, spray or fumigate all your Begonias at the beginning of the attack, or what is better, before any sign of the pest becomes visible. Prevention is better and easier than cure, but by July the plants are incurable. Do not let the atmosphere of the house become too dry for this class of plants in spring and early summer.

CARNATION LEAVES DAMAGED. *C. J. B.* So far as we can tell the wounds on the Carnation leaves were caused by an insect. The damage seems to have been caused while the leaf was young. We failed to find the insect which did the damage, but by careful observation of the living plant you may be able to find it yourself.

CHRYSANTHEMUM-LEAF EELWORM. *J. W. D. & C. D.* The Chrysanthemum shoots which you submitted to us were attacked by the Chrysan-

themum-Leaf Eelworm. Eelworm infection passes from the ground to the lower leaves in contact with it. Progress up the plant is made possible by the deposition of a film of moisture on the surface of the leaves at night. The eelworm travels in this film of moisture from the lower leaves to the top of the plant. Control is difficult, and depends upon drying out the surface of the plant. If the Chrysanthemums are outside it is necessary to dust them with some drying powder, such as a mixture of flowers of sulphur and lime. The best way of effecting a permanent control of this disease is to propagate from clean stools, rejecting all but the healthiest cuttings, and using sterilised pots filled with soil which has never been in contact with Chrysanthemums, Ferns, or other pot plants.

CUCUMBER DISEASED. *W. M.* The leaves have been attacked by the fungus *Cercospora melonis*, Cke. The disease is one which attacks only plants growing under conditions of high temperature and moisture, and may be controlled by providing efficient ventilation. Diseased leaves should be removed and burnt, and not allowed to lie on the ground. Butcher's Disease Resister is a good resistant variety.

INSECTS IN MEADOW LAND. *L. A. M.* If the grass on the meadow land is sufficiently withered up at present to burn, you should set it alight; but if too green, you should cut it with the scythe and burn or otherwise dispose of it to prevent the insects from laying more eggs between now and autumn. The ground should be bastard trenched, so as to keep the best soil on the top. The bottom spit should be dug over and left in the bottom; the turf can be pared off and placed on the bottom spit of the first trench, and the spit below the turf of the second trench used to fill up the first one. The one hundredweight of Vaporite may be distributed over the turf when cut and put into the trenches. This is double the quantity recommended by the makers for land to be planted or sown soon after, but that would not matter if you do not commence sowing or planting until spring. The action of Vaporite is upwards. Commercial naphthalene might be used, but it is usually in flaky crystals, and might not so readily diffuse through the soil as the powdery Vaporite, and the pounding of it to powder would mean much work in the absence of machinery. Gas-lime, at the rate of eight to sixteen ounces to the square yard, could be spread on the top after a portion of the trenching is done. It works downwards, and, if fresh, is very effective. Presuming that the last of the trenching is finished by the end of December, it would be quite safe to use gas-lime at the rate of one pound to the square yard. Turf is the best part of any soil, and should be dug in. Many of the Cockchafer and Summer Chafer grubs get killed during the operation of trenching, and they are so easy to see that most of them may be killed as the work proceeds. All the specimens of leather jackets of the common *Tipula olivacea* will be out of the soil during August, and the absence of grass would keep them out.

MUSCAT HAMBURG GRAPE. *E. W.* Your Grapes arrived in a very bad condition, but we believe they represent the Muscat Hamburg variety. This Grape is unsurpassed for richness of flavour when grown to perfection. It is, however, difficult to grow well in a mixed vinery, and needs to be grafted on Black Hamburg to be successful. If you cannot lift the roots and place them nearer the surface in fresh compost, and also protect the border from heavy rains during the winter months, you will be wise to discontinue the cultivation of this Grape, and confine attention to the varieties which do so well. From the description given, we gather that the vines have been neglected, and the roots have entered the cold sub-soil, thus causing the berries to shank and lack colour. Other causes of shanking are

overcropping, red spider, chills from bad ventilation; these and other ills you mention would be sufficient to cause failure with many varieties although Alicante may succeed.

NAMES OF PLANTS.—*W. A.* 1, *Berberis aristata*; 2, *B. concinna*; 3, *B. sinensis*; 4, *Veronica speciosa* var. *purpurea*. *A. H. W.* *Escallonia langleyensis*. *Miss H.* *Rubus Giraldianus*.

PEACH FRUITS DROPPING. *E. J.* The brief description you give of your failure with Peaches rather points to an attack of shot hole fungus; at the same time we think your border is at fault. In very light soils such as you describe, the borders should be at least two-and-a-half feet deep. Introduce some stronger loam into your light soil and make the border as firm as possible. It is almost impossible to over-water a Peach border during the growing season, especially in a summer like the present; extremes of wet and drought have a bad effect on the trees. Mulch the border next year so as to prevent such extreme conditions; afford water carefully and in every way endeavour to keep the soil in a more uniform state of moisture.

RASPBERRIES ON THE NORTH SIDE OF A WALL. *J. N. M.* We see no good reason why the Raspberries should fail on the north side of your wall, in fact, we have seen them growing and fruiting splendidly in similar positions where the soil was in a fertile condition. The ground should be thoroughly well-worked and receive a good dressing of short manure, or, better still, a large addition of leaf-mould. After it has been prepared, the soil should be allowed to remain for some weeks to settle before new canes are planted. Varieties that would probably suit your situation very well are Lloyd George and Pyne's Royal.

SEEDLING FIGS. *R. O.* By the description you give of your young Fig trees, they ought to fruit next year. Do not pot them into larger pots, but place them in a sunny position outside, or in a cold house, in full sun to thoroughly ripen their wood. Gradually reduce the water supply as the season advances, but never allow the roots to become really dry. Introduce them to a little heat and moisture next March, and increase the supply of water to the roots, when they will soon show young Figs, and continue to grow to maturity either in heat or in an unheated, sunny house.

STONE SPLITTING IN PEACHES. *F. T. S.* Certain varieties of Peaches are more subject to stone-splitting than others; dry borders, red spider and other cultural defects, are all conducive to stone splitting and failure. Lift the roots and treat the trees carefully, removing strong roots according to the age of the trees.

CATALOGUES RECEIVED.

- W. DRUMMOND AND SONS, LTD.*, 57 and 58, Dawson Street, Dublin.—Bulbs.
JOHN E. KNIGHT AND SON, Tottenhall Rosary, Wolverhampton.—Bulbs.
ALEX. JACKSON AND SONS, LTD., Newtownards, Co. Down.—Roses.
BARR AND SONS, 11, King Street, Covent Garden, W.C.2.—Bulbs.
R. WALLACE AND CO., LTD., The Old Gardens, Tunbridge Wells.—Lilies and other bulbs; Irises.
BARR AND SONS, 11, King Street, Covent Garden, W.C.2.—Irises; Daffodils and Hybrid Nerines.
STUART LOW CO., Bush Hill Park, Middlesex.—Roses.
ROBERT VEITCH AND SON, 54, High Street, Exeter.—Bulb list; fruit trees; Roses.
WM. CUTBUSH AND SON, LTD., Barnet, Herts.—Roses; fruit trees.
FINNEYS, Newcastle-on-Tyne.—Bulbs, Roses, fruit trees, etc.
AUSTIN AND MCASLAN, Glasgow.—Bulbs.
DAWKINS, 408, Kings Road, S.W.—Bulbs.
KERR AND CO., Glasgow.—Bulbs.



RHODODENDRON RUBIGINOSUM.

Photo C. P. Russell

THE Gardeners' Chronicle

No. 2021.—SATURDAY, SEPT. 19, 1925.

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SUPPLEMENTARY PLATE. Rhododendron rubiginosum.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 55.3.

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden London, Wednesday, September 16, 10 a.m. Bar, 30.0. Temp. 62°. Weather, fine.

The testing of Potatoes for Wart Disease.
THE immunity trials carried out at Ormskirk by the National Institute of Agricultural Botany with the co-operation of the Ministry of Agriculture have proved of the greatest service to the Potato industry. All the well-known varieties have been tested. Exposed to the heavily infected soil of Ormskirk throughout a growing season they have either succumbed or resisted attack of the disease. The results of the tests are found to hold good. A Potato is either susceptible or immune and the distinction appears to be absolute and permanent. From time to time, it is true, claims are made that the immunity of a certain variety has broken down; but when the claim is examined it is discovered to be ill-founded. In the majority of cases of this kind the appearance of Wart disease in a crop of an immune variety is due to the

chance occurrence of rogues of susceptible sorts among the immune variety.

The labour involved in the conduction of the trials at Ormskirk is very great. Each year a hundred or more old and new varieties are grown at the station and each variety has to be examined for the symptoms of Wart disease. In some seasons, moreover, when the incidence of Wart disease is light, the results may not be conclusive and then the trial has to be extended over a second year. The length of time which must elapse before an unequivocal verdict may be given is of little importance so far as old varieties are concerned; but it is of great importance in the case of new seedling varieties. It is therefore of no small practical importance that means should be devised which shall permit of the more rapid testing of varieties with respect to their behaviour to wart disease. Unfortunately the conditions which facilitate or obstruct infection of the Potato by the parasite (*Synchytrium endobioticum*) are still obscure. It is known that in wet seasons infection is rapid and that in dry seasons it is slower and more sporadic. When the conditions which govern infection are better known it may be possible to discover means both of promoting rapid infection and of diagnosing the disease in its earliest stages before the Potato plant shows any outward and visible sign of the disease. This, indeed, is the objective to be aimed at: to be able to test, for example, seeds or seedlings and thus to separate forthwith the sheep from the goats—the immune from the susceptible. Failing such a method of peremptory diagnosis, the best that can be hoped for is to speed up infection so that susceptible varieties may be induced to show their vulnerability to Wart disease in the shortest possible space of time. This has been done* by M. D. Glynne of the Rothamsted Experimental Station. Experiments already made in the field in this country and in America show that infection takes place at a relatively low soil temperature; at a temperature above 22° C. (72° F.) it does not occur. Laboratory experiments carried out at Rothamsted show also that infection is the more certain the wetter is the soil. This observation is in conformity with the fact that Wart disease is most prevalent in rainy seasons and in wet districts. Incidentally it serves to indicate that the disease is not likely to become endemic in the southern or eastern counties. Yet although this be so it has to be remembered that once the disease is introduced into a district, as it may be in a wet year, it is not easily eradicated; for the winter sporangia of *Synchytrium endobioticum* may lie in the soil and retain for many years their power of germination. Therefore the fact that the disease, although widespread, is confined to certain areas shall not blind us to the possibility that, given a sequence of wet seasons, Wart disease might spread generally and make the growing of susceptible varieties a dangerous and precarious practice. Following up the clues as to the conditions which make for infection, Miss Glynne was able to devise means whereby the presence of Wart disease may be recognised at a very early stage in susceptible varieties exposed to infection. The means which proved successful were to keep the growing tubers "on the dry side" during the first month after planting and then to maintain the soil in a wet condition during

the second month. By this method, in which the Potatoes may be grown in small pots, decision with respect to susceptibility or immunity may be reached in three months; and inasmuch as the plants are under control, the result is more certain than it is when plants are grown in the open and subjected to the wet or dry vagaries of the growing season. Yet more rapid results were obtained by Miss Glynne by the use of the summer sporangia of *Synchytrium endobioticum* as infection material. Warts of the disease placed on tubers kept in a moist atmosphere so that a wart is in close proximity with a young tuber brought about manifest infection in the course of three weeks. A somewhat similar method has been worked out in Germany for inducing rapid infection by winter sporangia. A compost made of soil and brayed up wanted Potatoes is allowed to weather during the winter and in the spring is laid on the eyes of sprouting Potatoes kept at a temperature of from 61-68°F. Infection becomes manifest in about three weeks.

When varieties classed as susceptible and immune were tested by this method, infection was observed in all the varieties which had proved susceptible in the field and also occurred to a slight extent in some varieties previously regarded as immune. This fact would seem to show that border line varieties exist which, although not absolutely immune, are sufficiently so to enable them to earn a clean bill of health when grown under field conditions. If this observation be confirmed it might well prove to be a starting point for the discovery of the chemical or physiological properties responsible for conferring immunity and susceptibility on different varieties of Potato.

British Carnation Society.—An exhibition of perpetual-flowering Carnations open to amateurs and gardeners will be held under the auspices of the British Carnation Society in the Royal Horticultural Hall, Vincent Square, Westminster, on December 1st. The schedule contains fifteen classes, eight of which are open to gardeners and seven to amateurs. The most important class is that for a decorative arrangement of not more than 100 Carnation blooms on a table space of four feet six inches by three feet, and the group may be decorated with any kind of foliage. The Reginald Cory Cup is offered in this class, and the Cup carries with it a cash prize of twenty shillings. Most of the other classes are for single vases of one variety of distinct colour. The Hon. Secretary is Mr. P. F. Bunyard, 57, Kidderminster Road, Croydon.

Origin of Covent Garden Market.—In the lecture he delivered before the members of the Royal Horticultural Society on the 8th inst., Mr. George Monro gave some interesting particulars of the origin of Covent Garden Market. He stated that the earliest London market for the distribution of fruit was on the site of the present Mansion House, and traders dealt in garden produce there long before any reference to Covent Garden as a market can be found. In 1220 two growers sold their produce at the gate of the Convent Garden and thus the famous market was commenced. In 1547 Covent Garden was granted a charter, by Edward VI, which reverted to the Crown in 1552. The market rates were granted to the Duke of Bedford and held by his family until two or three years previous to the war when they were sold to the Beecham Trust. In 1570 a portion was leased to a member of the Cecil family and in 1631 the market rates were leased to the Duke at £17 a year. In 1668 the market square was enclosed by railings, and it was then approximately about three acres in extent. Mr. Monro stated that Covent

* Infection experiments with Wart disease of Potatoes. *Annals of Applied Biology*, XII, 1 February, 1925.

Garden was not only the market for London, but the clearing house for all other markets in Great Britain, and buyers come to Covent Garden from all over the country.

Munificent Gift to an Agricultural College.—The late Mr. Colin Thomson of Auchendran, Ayrshire, bequeathed a quarter of the residue of his estate to the governors of the West of Scotland Agricultural College. He desired that the legacy should be devoted to research work, bursaries, and scholarships. The gift will amount to between £20,000 and £25,000.

Gardeners' Societies Outings.—On the occasion of the Annual Outing of the Croydon and District Horticultural Improvement Society on 26th ult., some eighty members and their friends visited the nurseries of Messrs. Allwood Bros., at Wivelsfield. The journey was made by char-a-bancs through some of the most delightful scenery in Surrey and Sussex. The special object of the visit was to inspect the Carnations, including the new varieties of *Dianthus Alwoodii*. The visit lasted about an hour-and-a-half, when the party travelled to Burgess Hill, where lunch was provided. Afterwards Messrs. J. Cheal and Sons' Nursery at Crawley was inspected. The Dahlias, which this firm grow very extensively, were viewed with great interest, and the so-called blue Dahlia named Lady Heath greatly interested the visitors. Tea was provided by Messrs. Cheal and Son on the lawn attached to the nursery, and after Mr. John Gregory, Vice-Chairman of the Society, had thanked Messrs. Cheal and Son on behalf of the visitors, the return journey was made home, Croydon being reached at 8.30 p.m.—Members of the Reading Gardeners' Mutual Improvement Society visited Mongewell park, Wallingford, the residence of Mr. H. Gould, on the 26th ult. The visitors were conducted through the gardens by Mr. Wicks, the gardener, and at the conclusion of the ramble the party was entertained to refreshments through the kindness of Mr. Gould—Members of the Cowley (Oxford) Horticultural Society visited the gardens at Westonbirt, the residence of Lt.-Col. Sir George Holford, K.C.V.O., on the 5th inst., on the occasion of the Society's Annual Outing. Mr. F. J. Clark, the head gardener, acted as guide. Special interest was taken in the arboretum, which contains many beautiful specimens of Conifers and other trees. Unfortunately, after lunch the weather turned wet, but Mr. Alexander, Orchid grower to Sir George Holford, conducted the visitors through the Orchid houses and later the kitchen and fruit gardens were inspected. Although the weather was so unkind, the outing proved most interesting and profitable, and after tea had been partaken, votes of thanks were accorded to Lt.-Col. Sir George Holford, to Mr. Clark and to Mr. Alexander.

A simple Method to Remove Splinters from the Flesh.—The many worries that beset gardeners include the annoyance of splinters and thorns entering the flesh, and a simple way of removing them is given in *The Journal of the Board of Agriculture of British Guiana*. Nearly fill a wide-mouthed bottle with hot water, place the injured part over the mouth of the bottle, and press lightly. The suction will draw the flesh down, and in a few minutes the steam will draw out the splinter."

Honour for Mr. Robert Craig.—At the forty-first Annual Convention of the Society of American Florists and Ornamental Horticulturists held at Buffalo, U.S.A., on August 18-20, the Gold Medal of Honour of the Society was presented to Mr. Robert Craig of Philadelphia. *The Florists' Exchange* states that the presentation of the medal was probably the outstanding feature of the entire three days' session. The medal is awarded every year, but not more than once in five years to one particular individual. Mr. Rudd, in making the presentation, stated that Mr. Craig was a master grower and a leader in everything pertaining to horticulture. He said, "I am glad this organisation has honoured itself by honouring Robert Craig, and I am particularly glad that it has become my pleasant duty to confer upon him this medal as a symbol of love and affection".

Mr. Charles Simpson.—Born in Morayshire, on the Gordon Castle Estate, Mr. Charles Simpson went to school with the present gardener there, Mr. Charles Webster. He served his apprenticeship at Innes House, the seat of the Earl of Fife, under Mr. Smith, a well-known and successful grower and exhibitor in Scotland. According to the custom of the trade, Mr. Simpson went to Edinburgh and in due course was sent by Messrs. Lawson's to Blair Drummond, the seat of Charles S. Howe Drummond, Esq., where he filled the position of outdoor foreman for twelve months. He subsequently occupied various positions at Cragie Hall, the home of Hope Vere, Esq.; Dysart House, the seat of the Earl of Rosslyn; and Wemyss Castle. After the considerable experience gained in these famous gardens Mr. Simpson went to America, and on his return took charge of the gardens at Torrie House, Dunfermline, for the late Lady Henry Grosvenor, then Miss Wemyss. Two years later he succeeded Mr. Carmichael (late of Sandringham) as gardener at Bignor Park,



MR. CHARLES SIMPSON.

Sussex. Later, he returned to Edinburgh, spending some time in a nursery and filling a position to a family at Manderston, before passing to the charge of Broadmeadows, Berwickshire. In the meantime, his old employer, Mrs. Wemyss, had moved to Balfour House, Markinch, Fife, and she invited Mr. Simpson to return: he did so, and remained there for seven years until his employer died. His next charge was at Newby Hall, Yorkshire, where he remained for about seven years, when Mr. Wemyss wanted him to take charge of the gardens at Wemyss Castle. This invitation was accepted, and for more than a score of years Mr. C. Simpson has ably fulfilled his duties. At first he had charge of the gardens and grounds but in due course the woods and forest department came under his care, and now, for about six years he has devoted his attention chiefly to the forestry work of the Wemyss Castle estate.

Botanist's Gift to the British Museum.—The late Miss Lilian Suzette Gibbs, F.L.S., of Santa Cruz, Teneriffe, who died on January 30, left all her collections of plants and books and papers connected therewith now at the British Museum, to the Trustees of the British Museum Natural History Botanical Department. We understand that for some years past Miss Gibbs had occupied a table in one of the bays at the British Museum Herbarium and she was therefore brought into close association with the officials of the department. Her specimens, which she bequeathed to the Museum, will probably exceed seven thousand

in number. She was an authority on the distribution of the high mountain flora in the Malay Archipelago where she did much original work. She also undertook expeditions in Queensland and Tasmania. Miss Gibbs was one of the earliest lady members of the Linnean Society and was also a member of other learned bodies. Her name is commemorated by the genus *Gibbsia*, a shrubby Nettle collected by her on the Arfak Mountains, the original specimen of which is in the British Museum Herbarium.

Show Assistants' Dinner at Edinburgh.—A kindly and generous thoughtfulness led Mr. David Cuthbertson to consider the position of the leading representatives of the seed and nursery firms exhibiting at the Edinburgh International Show. This thoughtfulness materialised in an invitation to dinner, which was accepted by about sixty of the assistants and representatives whom Mr. W. Cuthbertson meets at exhibitions throughout the country. The dinner was held at the North British Hotel on Wednesday the 9th inst. and a fine programme followed an excellent repast. A thoroughly enjoyable time was spent and everyone present expressed the highest appreciation of their host's endeavour to make their stay in Edinburgh as pleasant as possible.

Thefts of flowers at Edinburgh Show.—We learn that numerous unpleasant happenings characterised the conclusion of the International Flower Show at Edinburgh on Friday, the 11th inst. It appears that while efforts were being made to clear the hall of visitors preparatory to the removal of the exhibits, hundreds of bunches of flowers were deliberately stolen and despite the efforts of the stewards and police whole rows of flowers were removed from their vases without permission in the course of a very few minutes. It is regrettable that the majority of offenders were well-dressed women who evidently had no regard for other peoples property.

Honour for Professor Aug. Henry.—The Botanic Society of Poland has recently elected Professor Augustine Henry (of the College of Science, Dublin), as an Associate Foreign Member, in recognition of his scientific work in botany and forestry, and of his sympathy in the progress of their country since its liberation in 1918. Professor Henry visited Poland three years ago, and paid particular attention to the Larch, which is a native of the Lysa Gora range of hills north of Cracow. Trees raised from the seed of the Polish Larch are now for the first time in cultivation in the British Isles, and can be seen in the Glasnevin Botanic Garden, and at the Avondale Forestry Station in Wicklow.

Dahlia Number of "Gartenschoenheit."—Our Berlin contemporary, "Gartenschoenheit," publishes for September a special Dahlia number containing coloured plates of the varieties Ehrliche Arbeit, tawny, with yellow centre; Perle von Dresden, rose-pink, Mrs. Dresselhuys, paler pink; and King of Autumn, buff-pink. The colours are fairly true, and the flowers well-grouped; numbers of other varieties are shown in black and white, and the issue also contains much miscellaneous matter of interest in the garden at this time of year.

Forthcoming French Chrysanthemum Congress.—The programme of the twenty-fifth annual Congress of the French Chrysanthemum Society, to be held at Lyons from the 5th to the 8th November, is now to hand, and forecasts a busy four days for the delegates. Besides the Congress, at which a number of papers will be read and discussed, and the big Exhibition which is to be a feature of the occasion, there are a number of social events, including a 12 o'clock "breakfast" on the first day, in the evening a banquet, a gala performance at the theatre on the second day, a long excursion and a final official banquet provided by the municipal authorities. All the delegates, French and Foreign alike, will miss one familiar figure—that of the late Mr. C. Harman Payne, who was Foreign Corresponding Secretary to the National Chrysanthemum Society and always took the utmost interest in this annual event.

The New Director of the Botanical Survey of India.—Much satisfaction is being expressed in the north of Scotland generally, and especially in and around Morayshire, of which he is a native, over the news that Mr. Charles Cumming Calder, B.Sc., Curator of the Botanic Gardens, Calcutta, has been appointed Director of the Botanical Survey of India. Born on the farm of Presley, parish of Edinkillie, Morayshire, in 1885, Mr. Calder belongs to a family which has a remarkably fine record. His eldest brother is William Moir Calder, professor of Greek in the University of Manchester. A younger brother, a distinguished graduate of Aberdeen University, fell at the battle of Loos in his twenty-fourth year, while of his two sisters, one is a graduate in Arts of Aberdeen University, and the other is the wife of Mr. Macrae, Mycologist to the Government of India. Mr. Calder received his elementary education at Logie School, one of those fine old parish schools which have done so much for "lads o'pairts" in Scotland. From thence he went to Aberdeen University, where in 1908 he graduated B.Sc., in natural science, afterwards taking the B. Sc. degree in Agriculture. After gaining a Carnegie scholarship, Mr. Calder took a post-graduate course at Berlin, and on returning to Scotland was appointed assistant to the late Dr. James W. H. Trail, professor of Botany in the University of Aberdeen. Subsequently he received the important post of Keeper to the Herbarium at the Botanic Gardens in Calcutta, and recently he was made Curator of the Gardens. Colonel Gage, whom Mr. Calder succeeds, was also educated at Aberdeen University, where he studied medicine, and was also for some time assistant to the late Dr. Trail.

Vandalism in Gardens.—A correspondent writes:—"Time and again we read in the newspapers advertisements stating that in consequence of the destruction of flowers and shrubs by visitors the gardens and policies of so and so are now closed to the public. It may be taken for granted that proprietors who advertise thus have very good reasons for withdrawing the privilege the public have hitherto enjoyed. In a case which came under the writer's notice a few days ago, the people were not content to stroll quietly through delightful surroundings which had been thrown open to them, but had recourse to such reprehensible practices as stealing flowers, destroying rare shrubs, and breaking limbs off the trees. In self-defence a proprietor when faced with such shameful and wanton practices has no other course but to close his gates. True, the vandals are an infinitesimal proportion of those who visit sylvan scenery and beautiful gardens, but owing to their disgraceful conduct thousands of innocent people are deprived of privileges which they highly esteem. The spirit in which the vandals go about their nefarious work is just about as mean as their actions. Never, surely, could the old and trite adage, 'casting pearls before swine' be more appropriately applied."

Enfranchisement of Copyhold Lands.—Lords and Stewards of Manors and other persons who will be affected by the statutory enfranchisement of copyhold lands on the 1st January next by reason of the Law of Property Act, 1922, which comes into force on that date, will be interested to learn of the recent publication* by the Ministry of Agriculture of Rules dealing with the compulsory extinguishment of manorial incidents after that date. Copies are obtainable from His Majesty's Stationery Office. It will be remembered that the extinguishment of such manorial incidents as are saved by this Act can be carried out either by (1) agreement between the lord of the manor and copyhold tenant or (2) by the service of a notice requiring the ascertainment of the compensation for the extinguishment. In the event of no action being taken under (1) or (2) above, the remaining manorial incidents will become extinguished in the ordinary course

at the end of ten years from the 1st January, 1926. In the meantime, and until the extinguishment of such manorial incidents it will be necessary for all legal instruments for the transfer of enfranchised land or of any interest in such land to be produced to the Steward of the Manor for endorsement within six months of the date of the instrument. The form and manner of certificate to be so endorsed is prescribed in the Ministry's Enfranchised Land (Certificate of Endorsement) Regulations, 1925. Other publications of the Ministry in connection with the changes in the law of real property which will come into effect on the 1st January

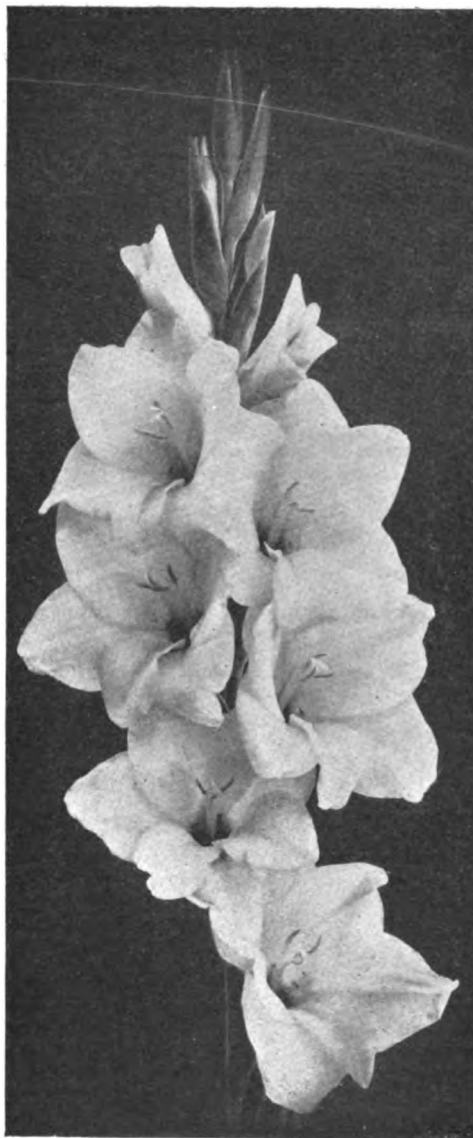


FIG. 88.—GLADIOLUS TESS.

R.H.S. Award of Merit, September 8. Colour rosy-mauve with creamy bar on lower segments. Shown by Orplington Nurseries (see p. 217).

next are the Redemption of Rents Rules, 1925, and the Renewable Leaseholds Regulations 1925.

The Seeds (Amendment) Act, 1925.—Proceedings for an offence against the Seeds Act, 1920, must normally be instituted within six months of the date of the alleged offence. It has, however, frequently been found in practice that it is impossible to ascertain whether a consignment of seed Potatoes has been correctly described as regards variety (one of the particulars which the Seeds Act requires the seller to state in writing at the time of sale or delivery) until the crop is grown, which may often be more than six months after the date of the delivery of the seed. An amending Act—

the Seeds (Amendment) Act, 1925—has therefore been passed which permits of proceedings for an offence under the Seeds Act, 1920, for making or causing to be made a false statement as to the class or variety of seed Potatoes, being commenced at any time within twelve months of the date on which the alleged offence was committed. The amending Act does not affect in any way sales of other kinds of seeds covered by the Seeds Act, 1920.

The Potato Crop.—Early Potatoes have yielded rather below average crops, but main crop varieties made good progress during August, and promise yields little, if at all, below the average. The plants are healthy and vigorous, and although disease is reported in a few districts only small areas appear to be affected. There is some second growth owing to the heavy rains, and this will affect the yield to a slight extent but the probable crop is estimated at 5.8 tons per acre, or the same as last year, giving an estimated total production of 2,856,000 tons or 160,000 tons more than last year, but 266,000 tons less than the average for the years 1915 to 1924.

Appointments for the Ensuing Week.—Monday, September 21: National Chrysanthemum Society's Floral Committee meets; British Mycological Society's Autumn Foray and Annual Meeting at Dublin (six days). Tuesday, September 22: Royal Horticultural Society's Autumn Exhibition at Holland Park Hall (three days); Newcastle and District Horticultural Mutual Improvement Society's lecture. Thursday, September 24: Royal Botanic Society's meeting.

"Gardeners' Chronicle" Seventy-Five Years Ago.

Pelargonium Galls.—This is a gardeners' name for those curious excrescences which you have noted at p. 579. They are familiar to most of us, more especially to those who grow the old-fashioned varieties, some of which are hardly a season free from galls; but for my own part, I could never make out that they were either the cause or the consequence of ill-health. The old Oak-leaved variegated Pelargonium, which is a sport from graveolens, is, of all the kinds I have seen, the most subject to them. Galls are produced on the roots and on all parts of this plant. I have been of opinion for a long time that this variegated plant first originated from one of these galls, although I have failed to get any of the galls to make buds, after trying them in various ways, and even splitting them thin, laying the pieces pressed on sand in pots with and without glasses; still, I think that I have seen a gall on the collar of a vigorous strong variety of the more recent seedlings burst into a shoot, and that the gall formed a dry burr round the shoot for a time. With this, however, I cannot charge my memory so as to be quite certain; but that I often failed with galls from different varieties, cannot be a mistake, for I made the last attempt as late as last June, with a gall which formed on a cutting of the variegated Oak-leaved Pelargonium; before it was rooted this gall had more matter in it than the cutting which produced it. It has occurred to me since I sat down to write this that the best plan would be to cut off a slice from the top of the gall (as soon as the latter was observed) during the height of the growing season, still leaving the gall attached to the parent plant; thus, by arresting the efforts of the mass to extend onwards, we might force it to form buds on the edges of the cut part. This process seems feasible enough: besides, we have some analogous cases with leaves, bulbs, etc., on record. May it not be possible to obtain variegated Geraniums by this process? If so, we should have a proof at once of the old idea that variegation in the leaves arises from a diseased condition of the parent plant. *D. Beaton. Gard. Chron., September 21, 1850.*

Publications Received.—The East Anglian Institute of Agriculture, Chelmsford—*Calendar for 1925-26*. Being a syllabus of the Courses conducted in the Departments of Agriculture, Agricultural Biology, Agricultural Chemistry, Dairy Technology, Horticulture, Poultry and Small Live Stock.

* Manorial Incidents (Extinguishment) Rules, 1925.

The Week's Work

THE ORCHID HOUSES

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Cypripedium.—Many plants of the cool-growing Cypripediums of both species and hybrids will now be sending up their flower scapes and should be given every encouragement to induce them to flower satisfactorily. The leaves should be cleaned carefully by sponging them with soapy water. As the scapes become of sufficient length they should be neatly tied to thin stakes, for if they are allowed to become twisted it will be difficult to cause them to grow erect, which adds so much to their beauty and utility. As the month advances the plants should be afforded all the light possible and supplied liberally with water at the roots each time the compost shows signs of becoming dry. Many of the summer-blooming kinds will now have passed out of flower, and the necessary repotting should be given attention.

Masdevallia.—Any of these interesting plants that were not re-potted in February may be dealt with in this respect during the present month. The dwarf-growing species, which include such as *M. O'Brieniana*, *M. Shuttleworthii*, *M. muscosa*, *M. xiphioides*, and others of this type succeed in comparatively small pots or pans and should be grown in a position near to the roof-glass. The more vigorous kinds, such as *M. elephanticeps*, *M. coriacea*, *M. Ehippium* and the strong-growing *M. macrura*, together with those of the section that produces flowers of a more brilliant colour, including *M. Harryana*, *M. ignea*, *M. Veitchiana*, and *M. amabilis*, are stronger-rooted, and require more rooting-space, therefore they are best grown in pots or rather deep pans. Few Orchids respond more readily to generous treatment than these *Masdevallias*, and if carefully watered for the first few weeks after re-potting will soon take possession of the new compost. The chaste *M. tovarensis* should not be disturbed at this season, and the same remark applies to members of the *Chimaera* group. Where a house or division is not set apart for these plants the warmer end of the cool house should be chosen, preferably the shaded side. In re-potting, the receptacles should be two-thirds filled with clean crocks for drainage. The rooting material may consist of *Osmunda*-fibre and some *Sphagnum*-moss cut into short portions, with a few crushed crocks incorporated with the compost.

THE FLOWER GARDEN.

By W. AUTON, Gardener to Viscount ELVEDEN,
Pyrford Court, Woking, Surrey.

Buddleia variabilis.—This late-flowering shrub is particularly valuable for its display at the end of the summer and autumn, but owing to the ease with which it is raised from seeds many inferior stocks exist. It is a rapidly-growing plant, consequently replacements become necessary from time to time, and those who possess good varieties should keep them true by propagating by means of cuttings. Shoots of partially ripened wood inserted firmly in pots and stood in a cold frame at the present time will root freely.

Ostrowia magnifica.—This beautiful, hardy plant may be propagated at the present time by means of root cuttings. Dig down carefully by the side of the plant and remove the soil from the large, fleshy roots, which, in good, well-worked soil, may be found to be growing so deeply as two or even three feet down. These may be cut into pieces about three inches long and planted in sandy soil in an open, sunny position. A hand-light may be placed over them to ward off heavy rains, otherwise no protection is necessary and the

roots will make good flowering plants in the second year.

Paeonies.—The herbaceous Paeonies are amongst the finest of June-flowering plants, and a Paeony garden at that season is a most attractive spot. Frequent disturbance is inadvisable, but occasional replanting will be necessary to prevent overcrowding and exhaustion, or the floral display cannot be maintained. The roots should be divided carefully, avoiding injury to the crowns; after division each piece should possess from three to six eyes or growing points. Where a garden is devoted to them the plants must necessarily be grown again in the same beds and liberal additions of loam and decayed manure should be given as the work of replanting proceeds.

Specimen Plants.—It is not wise to leave standards of specimen plants of such subjects as *Heliotropes*, *Zonal Pelargoniums*, *Plumbagos*, and others in their positions in the beds after this date, if it is required to preserve them for next year. They should be carefully lifted, put into the smallest pots practicable and placed in an unheated house. Keep them in fairly close conditions and syringe them frequently for a few days until they are established when the house should be ventilated freely.

Border Chrysanthemums.—The earlier varieties are flowering well, brightening the borders and providing plenty of material for cutting. The moist weather of August has made the plants grow rather tall, and in some cases it may be necessary to give the later-flowering varieties longer stakes to make them secure against heavy rains and winds.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Gloucestershire.

Chrysanthemums.—Since writing my notes last week, when I advised the pushing forward of preparations for the housing of tender plants, disturbing reports of frost having occurred in various parts of the country have appeared in the Press. Although, at the time of writing, the thermometer has not recorded frost here this month, the mercury on one or two nights, has fallen perilously near it. Fluctuations in temperature have been frequent and sudden, both day and night, and the wise plant cultivator will have moved the more tender plants which were growing outside under his charge to safe quarters under glass. After this date, risk of injury from frost to Chrysanthemums remaining out-of-doors unprotected are such that it necessitates them being placed under glass, or that some special provision be made to protect them on frosty nights. Those which are being grown for the production of large blooms and for exhibition, as well as the early-flowering decorative varieties, will be better for being placed under glass now, apart from the consideration of possible danger from frost. The later-flowering "bush" plants may with advantage be kept outside a week or two longer. These should, however, be placed together in a position where they may readily be protected on cold nights. By the employment of some extra stakes and cord, a skeleton framework may be erected over them, with very little trouble, on which may be stretched light strips of tiffany at night, thus rendering them safe against damage from light frosts. This will obviate the necessity to house more than a part of the plants at one time, thus gaining the two-fold advantage of prolonging the supply of late flowers and in avoiding the overcrowding of the plants when housed. Undue crowding of the plants in the houses is very detrimental to them at any time and more particularly so when they are first housed. This advice applies not only to Chrysanthemums, and I would like here to call special attention to the advantages to be gained from the affording of every growing plant, and those which are maturing their growth, whether in frames or in the houses, all the room possible to enable them to make sturdy growth and to mature it against the on-coming winter.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT FAN,
Wormley Bury, Broxbourne, Herts.

Peaches and Nectarines.—Remove the old fruiting shoots of Peach and Nectarine trees, unless they are required for extension, as quickly as possible after the fruit has been picked. This will greatly facilitate the ripening of next year's fruiting wood and allow all the sun and air to reach every shoot. Varieties such as *Sea Eagle*, *Bellegarde*, *Barrington*, *Princess of Wales*, and *Late Devonian Peaches* and *Milton* and *Victoria Nectarines* are apt to make very strong growth in the early stages of their development and continue growing until late in the season. Should red spider be present on the trees give the leaves a thorough spraying with an approved insecticide to kill the pest, and then discontinue spraying except on very hot days, as everything possible should be done to hasten the ripening of the trees before the sun loses its power. On no account should the border be allowed to get dry; water it thoroughly when moisture is needed, and in the case of trees that have carried heavy crops of fruit, liquid manure on occasions will be helpful, but care and discretion is necessary in feeding trees prior to their resting period. Keep the ventilators open both day and night and remove all fallen leaves at least once a day. See that the ties are not cutting into the bark.

Root-pruning.—It will be advisable to consider the condition of all Apricot, Plum, Pear, Peach and Nectarine trees as to the kind of growth they are making: if gross shoots are developing it is a sure indication that some of the roots are too big and getting away from their allotted space. Such trees should be noted for root-pruning, preferably before the fall of the leaf, about the end of the present month or the beginning of October. In large establishments it will be found the best policy to have a number of well-trained trees ready out of doors to be lifted into the respective houses when the present occupants are getting old and worn out. By this method a season's crop is not lost as is the case when young trees are planted.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Late Pears on Walls.—Most of the late varieties of Pears such as *Josephine de Malines*, and *Duchesse de Bordeaux* will hang until the end of October or early November. The finest fruits should be supported by tying a piece of bass, not too tightly, around the stalks, and fastened to the branches. When birds are numerous it is advisable to net the fruits. The nets may be kept clear of the front of the trees by arranging forked sticks or pieces of Bamboo fifteen inches or eighteen inches long at intervals. In many districts wasps are very troublesome to ripening fruits, and where this is the case the Pears may be enclosed in paper bags. The latter is also a good protection against early frosts, which have been rather severe on several occasions during the past few years. The rainfall throughout August and up to the time of writing has not been excessive, and I would advise feeding late Pears with a little manure water; use lesser quantities of this stimulant at this time of the year than earlier in the season, as the sun has less power to warm the borders.

Plums.—Late dessert Plums such as *Coe's Golden Drop*, *Coe's Violet*, *Reine Claude de Bay* and other late dessert sorts will need protection against damage by birds and wasps. Small paper or muslin bags will answer the purpose; when muslin has been used I have found it necessary to employ a double thickness against wasps.

Figs.—Outdoor Figs are very good this year and are not being troubled with wasps, but they need to be protected against birds.

Hardy Vines.—Where these are grown for ornamental purposes the foliage will now be assuming the beautiful tints that are so much admired. All young growths should be cut away to allow plenty of room to display the coloured leaves.

THE KITCHEN GARDEN.

By H. PRINCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Cauliflowers.—A sharp watch should be kept on all beds of Cauliflower to see that the curds do not suffer damage by early frosts. The leaves should be bent over the curds to protect them, as well as to keep them a good colour. If supplies are coming in too quickly some of the plants may be lifted and heeled in at the north side of a wall so as to prolong the season so long as possible.

Beetroots.—The roots of the main crop of Beetroot are in most gardens sufficiently large to be lifted for storing. Choose a dry day, being very careful in the process of lifting not to damage the roots in any way. The foliage should be wrenched off by a sharp twist of the hand and not too closely to the root; never cut the foliage close up to the crown. It is best to store Beets in a shed in sand, but if there is no shed-room available they may be clamped in sand against a north wall, when they will keep sound. The crops of July-sown Globe Beet will be much better left for a few weeks before they are lifted.

Winter Onions.—If the seeds of this crop have germinated quickly, some of the seedlings should be thinned as required and the thinnings used to mix with salads.

Caradoons.—Many different methods are adopted of bleaching this crop. After drawing the leaves together and tying them, the soil should be placed firmly around the plants. Another method is the use of brown paper, making it secure at the top and then drawing the soil up around it; strong paper should be used when his method is adopted. In many places hay bands are used for bleaching Caradoons.

Leeks.—Continue to earth-up Leeks in trenches on a favourable day. Keep the soil stirred with the hoe amongst the Leeks that have been dibbed in holes. Plants remaining in the seed bed may be still dibbed out into holes in ground which may have recently become vacant. These plants may not grow to a very large size, but they will be useful for very many purposes.

Celery.—Continue to earth up the successional batches of Celery as becomes necessary, always choosing a time when the foliage is quite dry. See that all soil round the plants is broken into a fine state before commencing the work, and take every precaution in the operation to see that the soil is kept out of the hearts of the plants. Celery has made good growth this autumn, as the plant needs plenty of moisture.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Calceolaria amplexicaulis.—Numerous suitable growths for propagating are now ready on this half-hardy herbaceous Calceolaria. Not being sufficiently hardy for cold frame treatment all through the winter, the cuttings are best rooted in boxes. Shoots of *C. amplexicaulis* root readily now, and cuttings may again be taken in spring from the autumn-struck stock by removing the tops of the shoots. Do not allow the cuttings to flag during the first twenty-one days after inserting them, and spray them daily during this period. The old plants, if lifted and potted, will make good specimens for use in the flower garden next year.

Chrysanthemums.—All pot-grown varieties of the bush and large flowered types should now be thoroughly dusted with flowers of sulphur, or sprayed with a mildew specific either before housing them or so soon as possible afterwards. For late-flowering bush sorts it is important that loss of foliage should not occur through mildew. All the plants will require fumigating several times after being taken indoors to clear them of aphids before the buds are too far advanced. Admit all the air possible to the plants and endeavour to maintain as dry an atmosphere as possible until the flowering period is over.

Violets.—The pits, frames, and soil in which it is intended to grow violets for the winter supply should be prepared forthwith, and it is advisable to place the soil in the frames some days in advance of the actual transplanting operations, to allow for the beds to settle down. The plants, now in the open borders, should

attention. Prick them off directly they are large enough to handle in a cold frame, which is necessary for wintering the plants successfully in bleak districts. The soil in the frame should not be of a rich nature and should be made fairly firm before planting. Cauliflowers require a little more room between the plants than Cabbages, and a distance of at least five inches apart each way should be allowed them. The plants will become established in the frame, the sashes of which should not be placed over them except in frosty weather or to ward off heavy falls of snow.

Lettuce.—Supplies from fresh, well-hearted plants growing outdoors may be prolonged for a considerable period if some of the plants are afforded protection from sleet showers and low night temperatures. Others not so far advanced will improve if lifted with a ball and planted in a frame that has been utilised for some earlier crop and is now vacant.

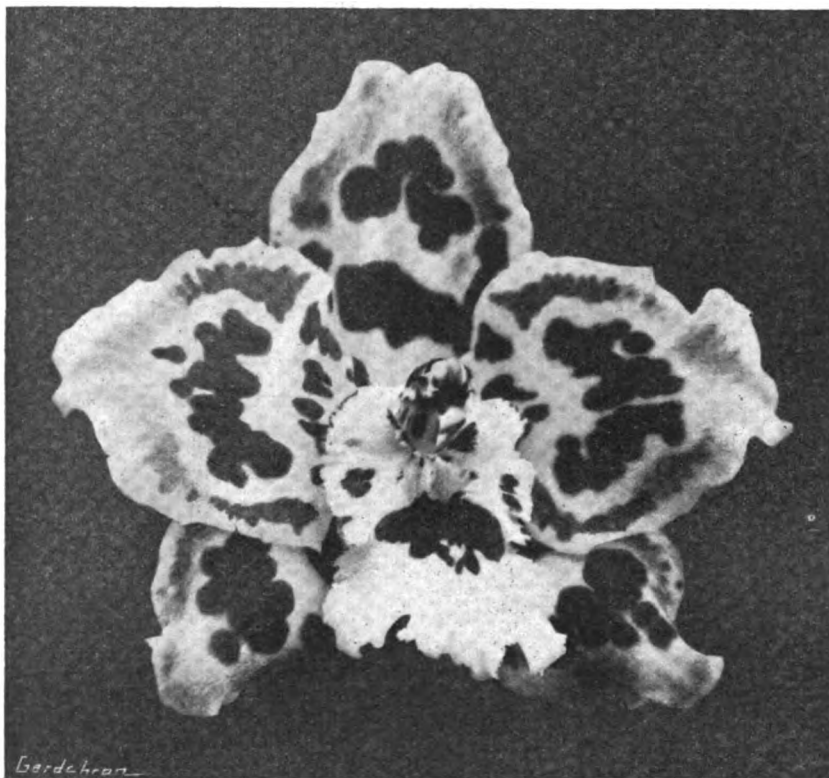


FIG. 89.—ODONTOGLOSSUM LAURENTIA MAGNIFICUM.
R.H.S. Award of Merit, August 25. Colour faint lilac with chocolate red markings.
Shown by J. J. Bolton, Esq. (see p. 175).

also receive their final "pinching" of the runners and be given a copious supply of water some days before being lifted. It will be advantageous for the plants to be occupying their winter quarters by the third week in September.

Cabbages.—Young plants raised from seed that was sown during the second week in August are growing freely and should be kept free from weeds. Stir the soil around the plants on frequent occasions and so soon as they have attained a height of from three inches to four inches a quantity may be removed and pricked out into rows on a border and nursed on, to be carefully lifted with a ball later, and planted out in their permanent quarters. When handling these plants from the seed bed or rows, a further quantity may be pricked off into a cold frame, allowing a distance of three inches each way between the plants. Dusting young Cabbage plants with soot at intervals will be found to be most beneficial to them, and serve as a deterrent to slugs.

Cauliflowers.—Like Cabbages, Cauliflowers raised from seed sown in August now call for

ORCHID NOTES AND CLEANINGS.

CYPRIPEDIUM STARLIGHT.

A FLOWER of this pretty hybrid raised in the collection of Clive Cookson, Esq., Nether Warden, Hexham, Northumberland (gr. Mr. W. J. Stables), shows a worthy addition to the favourite crosses of *C. niveum* for which the collection is noted.

The novelty was obtained by crossing *C. niveum* and *C. Helice* (*bellatulum* × *Psyche*) and is therefore a re-arrangement of the *C. niveum* and *C. bellatulum* parents. The flower more nearly resembles an enlarged *C. niveum*, the very small spotting being arranged as in that species.

The dorsal sepal of *C. Starlight* is pure white with some obscure violet spots at the base; the almost circular petals are white with small purple spots on the inner halves; and the lip is white with small purple and yellow spots on the upper surface. The stamens are white with an attractive yellow blotch in the centre.

CATTLEYA TRIUMPHANS, SANDERS' VARIETY.

A BATCH of this exceptionally fine strain of *C. triumphans* (Dowiana × Rex) has been flowering with Messrs. Sanders at St. Albans for some time past, and a flower representing their type is sent, which closely approaches a good *C. Dowiana* in size and form. The cream coloured sepals and petals are slightly tinged with lemon yellow, while the lip, in its mauve crimson colouring, with a profusion of yellow lines from the base, resembles *C. Rex*. It is very fragrant and a lasting autumn flower. The flower sent is from a second batch raised at St. Albans, the original form being one of the novelties in Messrs. Sanders' Gold Medal Group at the 1904 Holland House Show, when it gained the R.H.S. Award of Merit and was described in *The Gardeners' Chronicle*, July 16, 1904, p. 43.

CATTLEYA O'BRIENIANA.

With reference to the article on p. 192, Messrs. Sanders send the following extract from their new *Orchid Guide* :—

C. O'Brieniana, Brazil. Habit between *dolosa* and *Loddigesii*, but nearer *dolosa*, between which species it was at one time supposed to be a natural hybrid. There can, however, be little doubt that it is a true species.

CYPRIPEDIUM UNO.

In the note on *Cypripediums* at Nether Warden published in *The Gardeners' Chronicle*, December 20, 1924, p. 420, mention was made of a vigorously growing seedling *Cypripedium*, that Mr. Cookson had raised between *C. Charles Sladden* (*bellatulum* × *glaucophyllum*) and *C. niveum*. The plant has recently flowered and Mr. Cookson has named it *C. Uno*.

It is a fine addition to the *C. niveum* section of hybrids. The dorsal sepal is rather more than two inches in diameter and of good shape, while the upper and central portions are veined and line-spotted with rosy-purple, the bottom portion being suffused with purple. The finely-shaped petals are three inches long, one-and-a-half inch wide, and almost covered with a suffusion of rosy-purple, marbled with white. The shield on the column is rich purple with a yellow centre.

The foliage of this new *Cypripedium* is remarkably vigorous, being nine inches long, three inches wide, and finely tessellated. No doubt the exceptional vigour is derived from the influence of *C. glaucophyllum* which was concerned in the primary cross, being one of the parents of *C. Charles Sladden*. H. J. C.

FLORISTS' FLOWERS.

AUTUMN-SOWN SWEET PEAS.

IT must be conceded that the decorative value of Sweet Peas stands very high, for their wiry, slender stems, bright and varied colours and graceful form of the flowers, give them all the requisite qualities to make ideal material for every purpose which the florists' art demands.

Although spring sowing is usual and will continue to be generally practised, there is much to be said for autumn sowing, particularly on light, sandy soils where there is no liability to stagnated conditions during the winter. Not only will autumn-sown plants provide flowers considerably in advance of those obtained from the earliest spring sowing, but the growth is more vigorous and the flowers finer.

I have found that the best time to sow in this district is from the twelfth to the fifteenth of October, and for districts further north the date should be advanced until, in the midland or northern counties it would probably be preferable to sow in the early days of the month.

It is, of course, just as important to prepare the sites as one would for spring sowing, and this should have been done some time previously so that the ground has become consolidated. It is wise to sow the seeds somewhat thicker than is practised in the spring as not only is germination less certain at this season but a proportion of the young plants may succumb to the trying conditions prevailing during the short days of winter. Care should be taken, however, that overcrowding does not occur, as plants weakened by this cause cannot withstand the rigours of winter. Germination and subsequent growth will naturally be slow at this season, and pests will have to be guarded against. The chief foes are slugs and sparrows, and if the Peas are growing near an Ivy-clad building the depredations of the latter may be very serious. Where this occurs it is advisable to cover the rows with Pea-guards until the plants are about two or three inches high, and so soon as these are removed small twiggy sticks should be inserted on each side of the row. Where slugs are troublesome the usual precautions, such as sprinkling sharp coal ashes or lime around the plants and setting various traps for them, should be taken.

The Sweet Pea is a perfectly hardy plant and can resist severe frost much better than excessive moisture, hence protection, beyond a few twiggy branches, should not be attempted, as heavy protecting material is liable to do more harm than good owing to its conservation of moisture. W. Auton, *Pyrford Court Gardens, Woking*.

DAHLIAS AT WISLEY.

THE trial of Dahlias at Wisley is in excellent order. Each variety is plainly named and there is ample room between each sort to admit of inspection. In the early days of September many of the plants of the *Cactus* type had reached a height of seven feet with scarcely a bit of colour in the way of flowers. With very few exceptions, the *Cactus* varieties are absolutely useless as garden plants. The white *Jhr. G. F. Van Tets* is good, and *Acme*, a fine-petalled flower in buff and carmine seems promising.

Star Dahlias follow, and here one's fancy goes to *Leda*, carmine with a ring of lighter shade in the centre; *Haslemere Star*, rose; *Seaford*, rose and buff; *Shinfield Star*, rosy-carmine; *Reading Star*, crimson; *Gatton Star*, salmon-pink; *Felicia*, pink, and *White Star*.

So far as varieties are concerned the small *Pompon* type is at a standstill. One newer kind, *Albin*, has rather large blooms for the type, still, it is first-rate as a garden plant, and evidently has uses for cut flower purposes.

The big Show Dahlia is represented by a solitary sort named *Merlin*, and this bears blossoms too small for its type.

Next are the *Camellia*-flowered Dahlias, which might well be included with the small decorative type. The variety *May*, of various shades of yellow and red, seems to be the only sort one would add to three that may be accounted old, the dark crimson *Radium*, the rather lighter *Crimson Flag*, and the white-tipped *Reginald Cory*.

Decorative Dahlias form a dominant class, and at Wisley some of the newer varieties are among the best of the whole collection. *Tipsy*, crimson; *Carine*, apricot; *Aglaia*, salmon-pink; *Jeweltje*, pink; *Prudence*, tinted white; *Alick*, also white but with pink tint, are the more striking sorts bearing small or medium-sized blooms.

Leslie Hancock, a large crimson bloom; *Border Perfection* and *Reginald Godfrey*, constitute a trio of big crimsons, with the flowers borne upright.

Johan Mensing is regarded as a fine variety. The plant is about a yard high, has very little foliage, and bears medium-sized, rose-red blossoms in profusion on faultless stems. Huge brick-red blooms were noted on *Jean*, a variety, like the last, that is dwarf and free. Similarly, *Uncle Dick* has these last named merits of growth, with flowers of a pretty shade of red, tipped white.

Emblem, rose-pink; *Emma Groot*, with big mauve flowers, and a peculiarly cut leaf, grows about six feet high. This Dahlia is distinct and fine. *Salmonia* and *Nancy* are well-known old sorts, and another that is excellent is *Mr. Jno. Dix*, a pretty pink bloom; this variety has a fault, perhaps, in that the blooming is none too free. *Prestige*, an orange variety and *Menny Carlee*, white, are also conspicuous.

Of the large *Paeony*-flowered type, there are very few additions. I like *Lady Heath*, a mauve variety, and *Mrs. Skevington*, salmon-pink. The *Rose*, *Scarlet King* and *Vesuvius* are old varieties; so is *Psyche*, but the last as a yellow is unequalled, and might well be termed a "Decorative" because as many flowers were double as single. It is a really grand garden plant. The smaller forms are deservedly popular, including *Gwynne*, crimson; *Lucina*, orange-red; *Crimson Glory*, red; *Denys*, red; *Peach*, soft pink; *Harriet*, salmon-buff shades; and *Norah Bell*, carmine and yellow.

In the *colerette* type similar improvement is also slow. *Tuscar*, carmine and white, is the ideal variety; *Tiger*, in scarlet and white, has capital quality in the bloom; *Lady de Bass*, a crimson and white is good. Some of the varieties that had gained distinction in previous years seemed to me positively weedy. Single Dahlias, also, are a dwindling division. The dwarf-growing *Coltress Gem* is in a class by itself, although *Albion* is a pretty little white variety. No other single of what I may term the ordinary type appeals to me as does *Little Jennie*: the flower is less than three inches across, and it has a red ring on fawn, with a pink edge. It is free-flowering to a high degree. H. S., *Woking*.

NEW HYBRID ORCHIDS.

(Continued from July 25, p. 68.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Ella	C. Jasper × B.-C. Hene	Black & Flory.
Brasso-Cattleya Nora	C. Fabia × B.-C. Hene	Cowan.
Brasso-Laelio-Cattleya florida	B.-L.-C. Amber × L.-C. Golden Queen	Baron Schröder.
Brasso-Laelio-Cattleya Frau Selma Wolter	B.-L. Digbyano-purpurata × C. Schroder-ae	Paul Wolter.
Brasso-Laelio-Cattleya Luna	L.-C. Rubens × B. Digbyana	Cowan.
Brasso-Laelio-Cattleya Mona	B.-C. Mrs. J. Leemann × L.-C. Carmencita	Cowan.
Cattleya Debutante	Albion × Gaskelliana alba	C. J. Lucas, Esq.
Cattleya Esther Waldegrave	Warszewicz × Astron	Baron Schröder.
Cattleya Helena	Kienastiana × Maggie Raphael alba	Black & Flory.
Cattleya Hernia	Warszewicz × Dionysus	Black & Flory.
Cattleya Lyssander	triumphans × Rhoda	Black & Flory.
Cypripedium Starlight	niveum × Helice	Clive Cookson, Esq.
Laelio-Cattleya Ashton	L. Pacaya × C. Mossiae	Hon. Mrs. N. C. Rothschild.
Laelio-Cattleya Isenseeana	C. Mendelii × L. Boothiana	Paul Wolter.
Laelio-Cattleya Nebelungen	L. purpurata × C. Stuartii	Paul Wolter.
Laelio-Cattleya Valerie II.	L.-C. Momus × C. Kitty Wren	Charlesworth.
Laelio-Cattleya Peacock	C. Dowiana × L.-C. Colmaniana	Sanders.
Lycaste edmonsis	macrophylla × cruenta	Edinburgh Botanic Gardens.
Miltoniodes Britannia	Miltoniodes Harwoodii × M. Bleuana	Charlesworth.
Odontoglossum Carriannum	Cordoba × eximillus	Charlesworth.
Odontoglossum Eclipse	Aglaon × Thuis	J. J. Bolton, Esq.
Odontoglossum Joyce II.	President Poincare × Georgius Rex	A. Hammer, Esq.
Odontoglossum Royal Ascent	Felicity × Georgius Rex	Charlesworth.
Odontoglossum St. Mungo	Britannia × St. James	Charlesworth.
Odontoglossum Tom Ikingill	amabile × conspicuum	Mansell & Hatcher.
Sophro-Laelio-Cattleya albanensis	C. Dowiana × S.-L.-C. Jeannette	Sanders.

NOTE.—*Odontioda Galatea*, in the list for July 25, = *Odontioda Columbia*.

THE ROSE GARDEN.

SOME AUTUMN ROSES.

AMONGST a general collection of Roses none is more conspicuous at the present time than the bright crimson General McArthur, which has such a reputation for autumn flowering that it is often planted specially for its display late in the season. This year the second crop of flowers from General McArthur appears to be much finer than usual, due, undoubtedly, to the green summer. In addition to its floriferousness and rich colouring this popular Rose has a very strong perfume.

Lady Pirrie, which may be regarded as one of the finest Roses for gardening purposes, is also blooming very freely this autumn. It is an ideal Rose for massing, producing a fine crop of deep coppery red flowers, which are flushed with dark yellow and fawn on the inner surface of the petals. Mrs. Henry Bowles, a very fine variety of warm rosy pink colour, shaded with salmon-orange, is also giving a fine crop of flowers just now, and the only fault appears to be that the blooms are a little top-heavy so that they hang their heads.

Mrs. Henry Morse, is also flowering freely, but fully-blown blooms become rather balley, although nothing could be finer than the buds, which are a beautiful bright rose suffused with vermillion. The deep cream Harry Kirk is to be recommended for its blooming in autumn, the buds especially being very attractive; they are deep cream with a lemon base, but when the flower is expanded it fades to nearly white. The pale Rose Pharisæa is very free just now, but its predisposition to mildew militates against its garden value. Aspirant Marcel Rouyer is a beautiful H.T. variety raised by M. Pernet-Ducher. The colour is pale apricot, a most glorious bloom, and the growth of the plant is exceedingly vigorous. The popular Hugh Dickson variety seems to be exceptionally good this autumn, and it is hard to beat amongst the red varieties both for its vigour and floriferousness. The old Molly Sharman Crawford is also giving a generous quantity of blooms; this variety is good for all purposes and is one of the best Tea Roses in cultivation. The colour is described in the National Rose Society's list as "white, shaded eau-de-nil."

Gustav Grünerwald is one of the most fragrant varieties and a general utility Rose valuable for its autumn blooming. Its colour, carmine pink with a yellow base is exceedingly attractive.

Laurent Carle shows up conspicuously because of its fine crop of blossoms, which are a deep carmine colour.

A beautiful golden Rose seen in the collection under notice is Souvenir de Claudius Pernet, a delightful Rose with elongated petals that have been described as "Sunflower yellow," but the centre is a much deeper tone. Mrs. Oakley Fisher deserves mention because of the wealth of its flowers and pretty foliage. It is specially pleasing in the bud stage, and much used for table decoration and general decoration indoors. Madame Jules Bouche is very free and a good autumn bloomer. The flowers are white, shaded with pink in the centre, but this variety has the defect that it opens with a very conspicuous centre almost like a glorified single. Another of M. Pernet-Ducher's raising, deserving of mention for its autumn blooming, is Souvenir de Georges Pernet, a glowing Rose with a beautiful gold base to the petals. The ends of the petals are cochineal carmine, and the sheen of yellow pervades the whole of the flower.

These are a few of the varieties that attracted my special notice amongst a general collection of the older and newer sorts. The wet summer has doubtless had an influence, and a few Roses that would have showed up more conspicuously in normal seasons have doubtless found the conditions not to their liking. T.

TREES AND SHRUBS.

RHODODENDRON RUBIGINOSUM.

It is worthy of note that to the French Missionary, Abbé Delavay, belongs the honour of first introducing to our gardens three, if not four, of the most useful flowering shrubs among the Chinese Rhododendrons in one year. It was in 1889 that the seeds reached the Jardin des Plantes, Paris, and in November of the same year a few small seedlings of all four species were presented to Kew. Each in turn has provided the subject for a coloured plate in the *Botanical Magazine* as follows: *R. racemosum*, t. 7301; *R. yunnanense*, t. 7614;

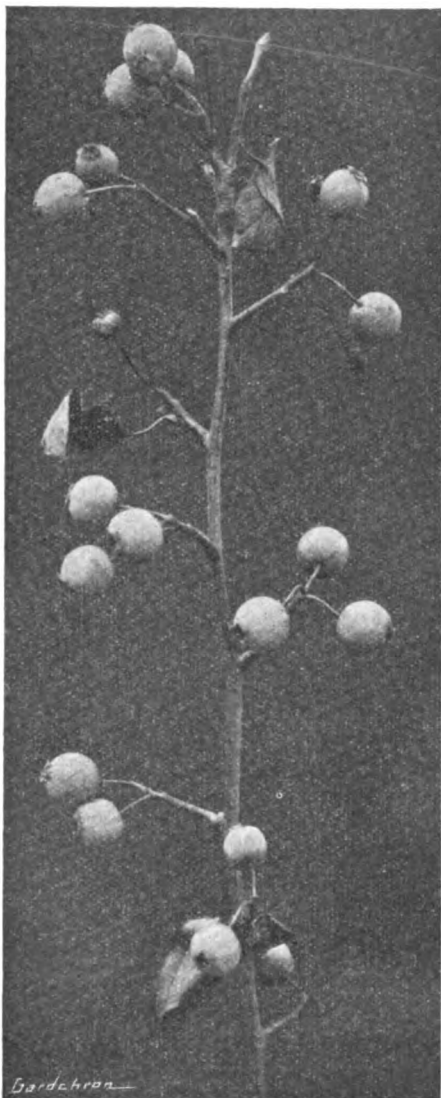


FIG. 90.—FRUITS OF PYRUS YUNNANENSIS.

R. rubiginosum, t. 7621; and *R. scrobinum*, t. 8841.

While all four species have important distinctive characters which have their particular value in our gardens, the subject of the accompanying Supplementary Illustration, *R. rubiginosum*, appears destined to be the most valuable addition, because it flourishes in a greater variety of soils than any species which I have so far come in contact with, not even excepting calcareous soils. In Major Stern's beautiful garden at Goring-on-Sea, which was originally a chalk pit, *R. rubiginosum* is thriving. The result of this indifference to the nature of the soil in which it grows has led to the experimental use of this species as a stock for some of the best of the Chinese species and other Rhododendrons which fail on soils containing any appreciable quantity of lime.

R. rubiginosum, as at present known in this country, forms a bushy shrub of stiff habit, up to about fifteen feet in height, but we may expect specimens much taller with age as Mr. George Forrest records it as a small evergreen tree up to thirty feet high on the Lichiang Range. The dark green, leathery leaves are oblong-lanceolate, one-and-a-half inch to three-and-a-half inches long, and one half inch to an inch wide. The undersides of the leaves are clothed with rusty-brown scales.

The flowers are borne in terminal clusters of four to eight blooms, one-and-a-half inch to two-inches wide, funnel-shaped, five-lobed, a delicate shade of pale rosy-lilac varying somewhat in colour in different seedlings, while position also appears to have some effect on the intensity of the colouring. The upper side of the flower is spotted with maroon or crimson. The flowering season is April to early May. Owing to the possibility of frosts at this early period, shelter is desirable, and from experience at Kew, the plants evidently delight in some shade and shelter, for the largest specimens, which flower very freely, are protected by a tall *Arbutus*. This protection, however, is not a necessity, as in other parts of the grounds there are groups, while a bed on a lawn is fully exposed. All these plants are sturdy bushes and flower freely each year, but there is the possibility of damage by frosts when the flowers open.

Seeds provide the best means of propagation, the seedlings flowering when from three to four years old.

Since the Abbé Delavay's first introduction of *R. rubiginosum* in 1889 from the Tchang-chan Mountain, about Tali, in Yunnan, Mr. George Forrest has sent home seeds from several localities: in 1906 from the Tali Range at 10,000 feet to 11,000 feet; in 1910 from the Lang-Kong Valley on the ascent of the Sung-Kwei Pass; in north-west Yunnan at 9,000 to 10,000 feet, and again during 1913-14 on the Lichiang Range, where he records it as a large bush or small evergreen tree up to thirty feet in height. A. Osborn.

PYRUS YUNNANENSIS.

REFERENCE is made to this interesting wild Crab Apple of Yunnan in the issue of *The Gardeners' Chronicle* for August 22, page 142, in a review of Inventory, No. 74, issued by the United States Department of Agriculture, Washington. Several of Mr. Joseph F. Rock's collection numbers of 1923 are this species, found in the western part of the province of Yunnan, on the Likung Snow Range, at 10,000 to 12,000 feet.

Pyrus yunnanensis, Franchet, was originally discovered by the Abbé Delavay, in Yunnan, about 1889, growing in mountain woods at 9,000 to 10,000 feet elevation. For its introduction to our gardens we are indebted to Mr. E. H. Wilson who collected seeds in 1908 in Yunnan.

Unfortunately, very considerable confusion exists between the typical *P. yunnanensis* of Yunnan and Western Szechuan and a wild Crab Apple of Hupeh, introduced by Mr. Wilson in 1901. Under the provisional name of *Pyrus Veitchii*, Wilson No. 539, this very ornamental Crab was given an Award of Merit at the fortnightly meeting of the Royal Horticultural Society, on October 8, 1912, when exhibited by Messrs. James Veitch and Sons, from their Coombe Wood Nurseries. This particular form was presumably considered identical with *Pyrus yunnanensis*, Franchet, it being subsequently figured under that name in the *Botanical Magazine*, tab., 8629. A fruiting spray was illustrated in *The Gardeners' Chronicle* of September 7, 1918, Fig. 34, as *Pyrus yunnanensis* (syn. *P. Veitchii*).

Now that we have the two forms growing together in our gardens, it is obvious that they must have at least a distinctive varietal name, and the tree figured in the *Botanical Magazine* tab. 8629, has been designated *Pyrus yunnanensis* var. *Veitchii*, Rehd.

P. yunnanensis belongs to the section of the *Pyrus* family which Roemer separated as

a distinct genus under the name of *Eriolobus*. Other species of this group are *P. kansuensis*, *P. trilobata*, and *P. Tschonoskii*.

Wilson's number 1,000 (1908) illustrated in Fig. 90, and his 1252, represent the type *P. yunnanensis*. It is a deciduous tree thirty feet to forty feet high.

The variety *Veitchii* (Wilson No. 539, 1901), differs from the type in the usually larger ovate leaves, all, or nearly all, distinctly lobulate with short acuminate lobules, becoming glabrescent in autumn. The fruits are a much richer red in colour, with whitish dots. It is a native of Hupeh.

In typical *P. yunnanensis* the leaves are ovate to oblong-ovate, less often deeply lobulate, much more densely tomentose beneath, with more persistent tomentum. There are fewer flowers in an inflorescence, which is smaller and more densely tomentose. The fruits are duller in colour and not so large, averaging a half-inch in diameter, while those of var. *Veitchii* are three-quarters of an inch in diameter. Typical *P. yunnanensis* is confined to Yunnan and Western Szechuan. *A. Osborn, Kew.*

ALPINE GARDEN.

PHYTEUMA ORBICULARE.

THIS Horned Rampion is a very distinct plant in the rock garden in late summer, the deep blue flowers being both quaint and beautiful. Dry conditions are, apparently, favourable to its growth. The plant is from six to eighteen inches high. The radical leaves are petiolate, lanceolate and crenate, the cauline ones sessile and linear-lanceolate.

The flowers are produced from June to August in round heads. They are of an attractive shade of deep blue and somewhat persistent. It is a very pretty plant for the rock garden, and may be propagated easily from seeds or by division in spring.

P. orbiculare is distributed over southern Europe and withstands our winters well; the plant was figured in *Bot. Mag. t. 1466. Ralph E. Arnold.*

CINERARIA LOBATA.

THIS sub-shrubby species may be recommended for its adaptability for flourishing in the poorest and hottest of rock garden ledges. It is very nearly an all-season bloomer, opening the first of its yellow stars in spring and continuing in flower until late autumn.

C. lobata (sometimes listed as *Senecio lobata*), makes a neatly rounded bush of one to two feet in height. Its glossy, fresh green leaves are kidney-shaped, but deeply notched, and above them are borne on loose, erect sprays, the golden-yellow flowers with their curiously irregular rays. This cheerful little bush has a suitable companion here in the form of the shrubby *Teucrium Aekermanii*, with aromatic, silver-grey leaves and large heads of purple flowers, this Germander being no less drought proof than its neighbour. *A. T. J.*

LEUCOJUM AUTUMNALE.

Few flowers are as fairy-like in their loveliness as the Autumn Snowflake, *Leucojum autumnale*, a delightful little plant seldom grown now, but a real gem for the rock garden. I prefer to plant in July, but unless the bulbs are secured from the very few firms who specialise in the delivery of autumn-flowering bulbs in that month, it has generally to be procured at the same time as other bulbs, when it has sometimes started into growth and requires more care in planting.

The plant flowers in autumn and gives great delight in the rock garden with its small, drooping bells of silvery-white tinged with pink, and borne on chocolate-coloured stems about six inches high. I have had the plant in bloom until after frost came, on a warm, sunny rock garden in light soil. I have always found *Leucojum autumnale* hardy in a light, well-drained soil and in a warm place, but in one

nursery in the north I have seen it protected by a hand-light in winter, when the leaves are making their full growth. The bulbs should be planted to a depth of two inches, although in warmer localities an inch will be sufficient. It is by no means an expensive bulb, and its possession well repays its owner for his small expenditure. *S. Arnott.*

BOG GARDEN.

ASTILBE DAVIDII.

IN a proper setting, where there is part shade and plenty of green, the gorgeous spires of this *Astilbe* are remarkably handsome, and especially welcome, inasmuch as they are among the latest blooms of the year. Furthermore, there is no need to associate clashing colours with *A. Davidii* when we have such a goodly selection of white and creamy subjects of like character to group with it. *A. Thunbergii* and *A. grandis* are both first-rate plants for associating with this subject, and some of the autumn-flowering *Cimicifugas* may also be used with charming results.

A. Davidii must always be regarded as a plant of the highest value for the water side and the moist bottoms of thin woodland. It is hardy and easy to cultivate and does not offend by running so freely as do some of its relations. Like the rest of the race, it enjoys a good rich soil, and an annual top-dressing in early spring; few plants will reward the grower more liberally for such attentions than this *Astilbe*. A well-grown specimen will send up stately growths to a height of six feet, three feet of which will be in colour. *J.*

LYTHRUM SALICARIA ROSE QUEEN.

THIS Loosestrife is most valuable for grouping in the borders, and also for planting by the waterside. The tall spires of rosy-crimson flowers are very effective during midsummer. The average height of the spikes in borders is four feet.

When grown in moist soil by the waterside, much taller stems are produced, and it is under these conditions that the plants are seen at their best. It forms a useful succession to the *Astilbes* where rosy flowers are appreciated on banks of streams or ponds.

The plants may be easily propagated by division of the roots. It is serviceable for use as a cut flower, although its lasting qualities are, perhaps, not so good as those of many other subjects. This plant has been found most useful for planting on low-lying, boggy ground which is difficult to drain. *C. Ruse.*

HARDY FLOWER BORDER.

THALICTRUM.

THE introduction of *Thalictrum dipterocarpum* stimulated interest in a family of fine hardy plants which are easily cultivated. The light foliage and graceful habit of growth render these plants of inestimable value for grouping with others of sturdier growth and of more gorgeous colouring. Most of the species are native of the north temperate and frigid regions, and three species are included in the British flora.

T. alpinum has purplish or mauve flowers; the raceme is drooping, later erect and simple. The flowers are sparsely produced during July and August on stems from six inches to ten inches in height; the leaves are bi-ternate, with leaflets about a quarter-of-an-inch long, and they are glaucous beneath. The stems are often stoloniferous. This species is distributed over Europe (including Britain), Asia and North America.

T. adiantifolium is a well-known plant; the true form is a delightful subject for rock gardens, growing to a height of about one foot and bearing foliage closely resembling that of the Maidenhair Fern. The flowers are greenish.

T. aquilegifolium is another familiar plant, well worthy of a place in the hardy flower border, especially the form *purpureum*, which has pinkish-purple flowers. *T. anemonoides*, the Rue Anemone, produces several flowers in an umbel and the flowers have five to ten sepals; they are white, sometimes pinkish, and develop in early spring. The leaves are bi- or tri-ternately compound: the leaflets are round, cordate at the base, and long-petiolate. The stems arise from a cluster of thick, tuberous roots to a height of only six or eight inches. This very desirable plant was introduced from North America in 1768, and is figured in *Bot. Mag. tab. 866*. The species is sometimes known as *Anemone thalictroides*.

Thalictrum dipterocarpum is fast becoming popular, for it is a grand border plant, being exceedingly beautiful when isolated in beds. There is also a white form known as *album*. The species is very easily raised from seeds.

T. flavum is a good plant for the back of the herbaceous border; it attains to a height of from three feet to four feet, the stems being stout and well-furnished with glaucous foliage. The leaves are ternately, bi- or tripinnate, the leaflets being about one inch long, and three-lobed. The yellow flowers are freely produced on a compound corymbose or pyramidal panicle. The rootstock is creeping. It is a native of Europe (including Britain), and Asia.

T. glaucum is probably a varietal form of the last species, although it is given specific rank by some authorities. It grows to a height of five feet, has yellow flowers and ample glaucous foliage.

T. minus, of which *T. adiantifolium* is in all probability a form, is a very desirable little plant, on account of its Fern-like foliage; it is generally distributed over the northern hemisphere, including some parts of Britain.

T. petaloideum is a somewhat rare plant; the flowers are corymbose, have white sepals, flesh-pink filaments and yellow anthers; they are produced in June and July. The leaves are ternately decomposed, the leaflets ovate, obtuse, entire or three-lobed. The stem is round, naked or nearly so, and attains to a height of eighteen inches. This species was introduced from Dahuria in 1799.

T. tuberosum grows about one foot in height and develops its white flowers in June. The leaves are crowded, petiolate, bi-tripinnate. The leaflets are three-lobed and smooth. This tuberous-rooted species was introduced from Spain in 1713.

T. galioides is a very desirable plant producing a light, feathery plume of greenish-yellow flowers in August. It grows about two feet high.

T. illuminator has golden foliage and yellow flowers. *T. angustifolium* (syn. *laserpitifolium*) is another good yellow-flowered *Thalictrum*.

The genus gives us at least one alpine gem in *T. minus pubescens*, an interesting, rare and minute form from Zermatt.

These *Ruses* may be propagated by division or by seeds, the latter being by far the best method of increase for *T. dipterocarpum*, *Ralph E. Arnold.*

BULB GARDEN.

TULIP SCARLET DUC VAN THOL.

Few among the many thousands who annually cultivate this popular variety are aware of the fact that it is not a Van Thol Tulip at all, but is simply a very early single variety. A careful comparison of bulb, plant and flower, with that of the parent Van Thol variety will reveal very marked differences. In 1867, when in the employ of Messrs. Beck, Henderson and Child, of Upper Thames Street, I was invited by a well-known Dutch grower to spend some time in Holland during the flowering season and so make myself acquainted with the different varieties of Tulips and their cultivation. My employers gave their consent, and I had one of the most enjoyable and use-

ful experiences of my life. My host introduced me to the heads of the principal firms, each of whom did his utmost to interest and instruct me. Amongst others, I met Mr. F. Van Velsen, Junior, of Overveen, who had spent some time in the nurseries of Messrs. J. Veitch and Sons, Chelsea, and was proud of the fact.

While I was enjoying his hospitality the conversation turned upon Scarlet Van Thol Tulip, which was creating a great stir at that time, and of which Mr. F. Van Velsen was known to be the raiser. Judge of my surprise when Mr. Van Velsen said, "It is not a Van Thol Tulip, but a very beautiful early seedling that I raised and named Dolphin. Everyone that saw it said it was a splendid variety, but very few bought it. It did not 'catch on.' As I believed its merits would sell it, I had planted a large quantity but it looked like having them left on my hands when a neighbour said, 'people don't like the name; why not call it Scarlet Duc Van Thol.' But, said I it is not a Van Thol. 'Never mind that,' said he, 'it is as early as the Van Thol, and a much better flower,' and in the end I was persuaded to accept his advice and now I cannot grow enough to fill my orders." The friend was right: It made good and after sixty years have elapsed it is the best early scarlet Tulip, and sells in immense quantities every year. S. B. Dicks.

GLADIOLI IN 1925.

THE drought which prevailed in July and the spell of wet weather that followed it enabled Gladiolus growers to form definite opinions as to which conditions were most suitable to these plants. In my garden in north Devon those July-flowering kinds which were planted in ordinary soil which had not been specially prepared gave spikes much below the average, whilst the later-flowering kinds which flowered after the arrival of rain produced first grade spikes. In some cases the same varieties planted at different seasons and flowering respectively during the dry and wet periods showed an equal difference in quality, and this fact strengthened the conclusion I had come to that a wet summer is really best suited to Gladioli.

But it is equally true that the ill-effects of drought may be more or less overcome by a careful preparation of the ground previous to planting the corms, and my own experiments in this direction are sufficiently convincing. The method I adopted was to dig trenches in the same way as is done for Sweet Peas. A thin layer of rotten manure was spread at the bottom of the trenches after which these were three-parts filled with soil and rotten manure mixed together. Above this I put three or four inches of sifted soil mixed with a liberal quantity of sand and a sprinkling of wood ash. When the corms were planted the replenished trenches were still a few inches below the surface of the surrounding soil. No watering was done during the dry weather and the spikes which developed during the drought were everything that could possibly be desired. My theory is that the thorough preparation of the soil induced the corms to produce roots rapidly, and the good rooting medium made the plants independent of rain.

One of the troubles of present-day Gladiolus raisers seems to be that of naming new varieties, and the difficulty in finding a name for the new white Gladiolus recently exhibited before the Royal Horticultural Society was scarcely to be wondered at. My own compilation of named varieties which have been put into commerce during the past few years numbers well over three thousand. In this list are, of course, many duplicates, and there is every prospect of confusion in the years to come if named sorts continue to pour into the market at the same rapid rate. This autumn will witness the formation of an English Gladiolus Society and it should be one of the earliest duties of this body to establish a definite method of registering new varieties. Here the Society might well be guided by the American Gladiolus Society, which has considered the question of

nomenclature in a thorough manner. Growers submit the proposed names with descriptions of any new sorts which they intend to put into commerce. These names are announced for a definite period in the Society's publications and if no objections are filed in the meantime, the registration becomes complete. Without some system of this kind it is almost impossible to avoid duplication of names.

The plan adopted by Messrs. Lowe and Gibson whose Gladiolus seedlings have gained much notoriety, is to take names for new varieties from Homer's *Iliad* and it is obvious that if each grower had some definite source for names,

rigid stem. These at least were the marks of show Gladioli. The advent of a species with graceful, slender spikes and with flowers of a dainty shade of yellow opened up possibilities little realised at the time. With the new race of *Primulinus* hybrids may be said to have commenced the permanent popularity of the Gladiolus as a decorative flower. The wondrous shades of delicate colours seen in this marvellous race are now well-known, and all who send out new, named varieties in this section would be well-advised to bear in mind the characteristics which made these hybrids so justly famous. It is to be hoped

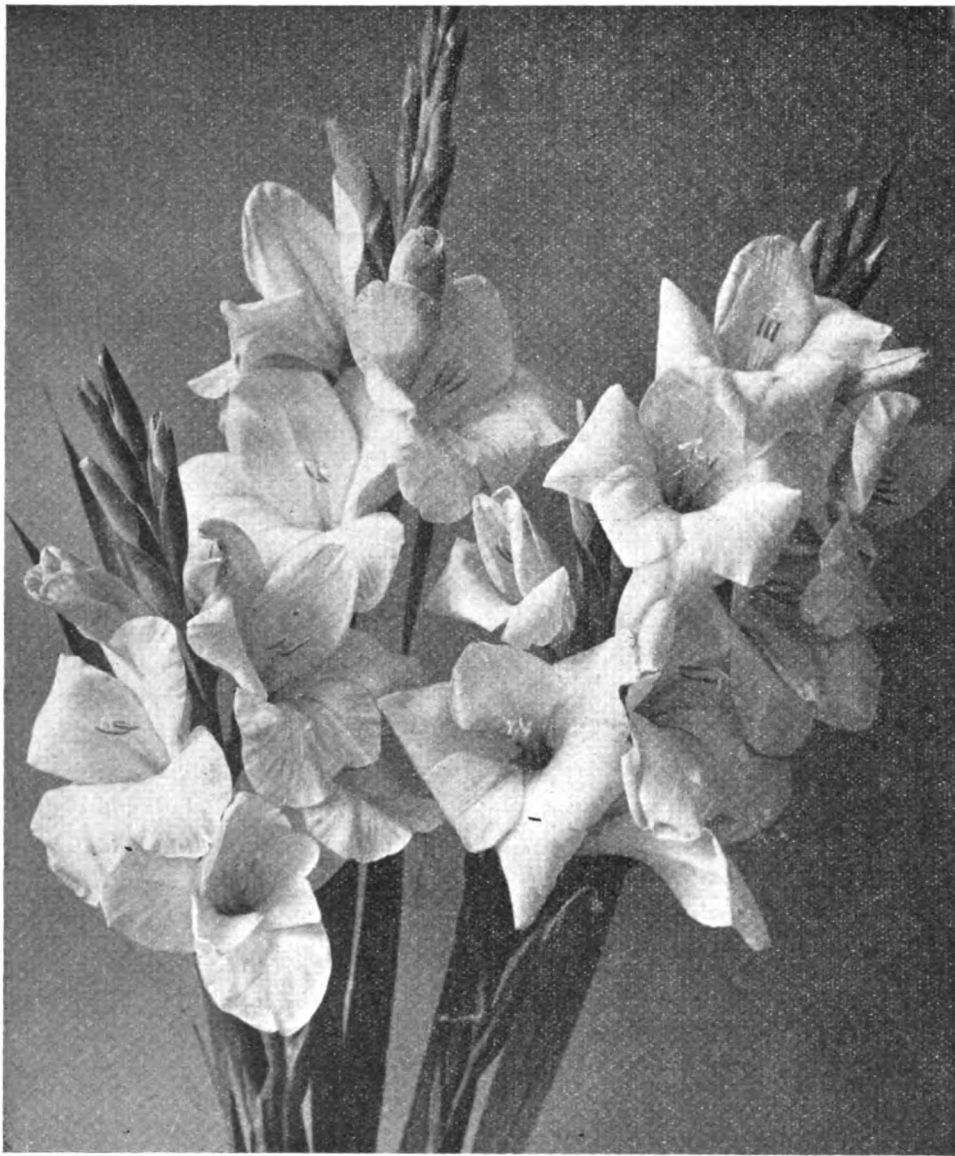


FIG. 91.—GLADIOLUS MARÉCHAL FOCH.

this source might be avoided by other raisers and much confusion avoided. The question of the limitation of named varieties is not an easy one. The Gladiolus is making such rapid strides that the best variety of one year may easily be superseded the next. The flower lends itself readily to the brush of the hybridist and the plants are prolific seeders. Every year named varieties are being discarded for better ones but Maréchal Foch (Fig. 91) is likely to hold its position for some time to come.

Of course, the one event which marked a definite period in the history of the Gladiolus was the introduction of *G. primulinus* some twenty years ago. Previous to that time Gladioli were famous for their majestic stature and for their rich and heavy colouration. The flowers were large and packed together on a

that the new Gladiolus Society will refrain from making any awards to new sorts which do not possess these characteristics.

The work of hybridists on the Gladiolus can hardly yet be regarded as complete, and a still more glorious future may be predicted for this flower. Only a small percentage of the 150 known species of Gladioli can claim parentage to any present-day varieties, and the possibilities of introducing still newer types are practically unlimited. We have yet to see a Gladiolus which can truly be described as blue, while the scented, garden variety still remains to be born. The creation of a perfumed Gladiolus should not be regarded as an impossibility when we remember how fragrant are the flowers of some of the natural species. H. Greaves, F.L.S., Barnstaple.

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MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XVII.—HOME AGAIN.

THE excitement of the holiday was now over. We were rather glum as we marched down this seemingly endless valley, travelling almost due east. Nor was the weather such as to hearten us, for it still rained steadily, and when the rain ceased the sky remained overcast. There was little forest visible except high up in the glens. The right bank of the river, which faced north, was more or less wooded, but on the left bank, where we were, scrub clothed the slopes. This was mostly Oak, with scattered *Sophora*, *Buddleia*, *Cotoneaster*, *Clematis*, etc., just as at the Tsela Dzong itself. Gaunt sticks of *Verbasicum* and *Incarvillea* stood up here and there. On the third day we crossed the river by an excellent bridge, and found ourselves in mixed forest which came down almost to the waters' edge—*Picea*, *Birch* and *Poplar* chiefly. Here the small, rose-purple 'Lapponicum' *Rhododendron* was flowering well for the second time, and between the showers, the vivid blue 'Ornata' *Gentian* opened its cups widely.

At last on the fifth day after leaving Gyamda, the weather cleared up and we enjoyed a spell of sunshine. It was pleasant enough in the valley without being exciting. In the widely-scattered villages a bright, gamboge-flowered *Cucurbita* ramped over the hedges. Just outside one village a great field of tawny-orange purple-spotted 'Martagon' *Lily* grew amongst a wilderness of Peach trees, and high grass. This *Lily* stood three to four feet high, and the stem was leafy almost to the base, with rather narrow linear leaves, in the axils of which bulbils were freely borne. I much regretted that I had not Professor Wright Smith's *Notes on Chinese Lilies* with me at the time; but there could be no doubt that I had found here a form of the widely spread and variable *L. Davidii*. Was it indigenous? I doubt it. Never did I

see it truly wild, and only on this one occasion did I see it growing at all, though I had previously seen cut flowers laid on a household shrine. I was told that the bulbs are not eaten by the local inhabitants as they are in Yunnan, for instance, and the only use to which the plant is put appears to be for cut flowers with which to decorate family and monastic altars. The plant is not even cultivated for that purpose—it simply happens to be there and consequently use is made of it. Other flowers are also used for the same purpose.

But if this *Lily* is neither wild nor cultivated in Kongbo, how did it get there? The answer is probably that it was brought thither by the Chinese not so many years ago. I saw it only in the Gyamda valley, whence the full flood of the Chinese invasion swept southwards from the China-Lhasa road to the Tsangpo. Any way, it was a matter of such interest to find



FIG. 92.—ISOLATED ELMS WITH MOUNTAIN BACKGROUND. IN TIBET.

L. Davidii so far west that I collected specimens, and also a few bulbils (it was no use taking bulbs at that season, with the plants in full bloom) which I hope will survive the journey home. The vegetation changed slowly. As the valley widened out we passed through some beautiful park-like country, and the scent of the Pines was like a breath of Surrey. But there was no 'Virgatum' *Rhododendron* on these Pine-clad slopes, no Bracken, and no pink 'Martagon' *Lily* either. The country was too dry for that. The mahogany 'Triflorum' *Rhododendron* took the place of the 'Virgatum' and a small creeping *Gaultheria* with pink flowers and blue-black berries clothed the rocks. Then came meads, where the large, late-flowering 'Sikkimensis' *Primula* (the 'Cowslip' *Primula* as I have elsewhere called it) was still in bloom; and these wet meadows were succeeded by dry, sandy flats, carpeted with blue-flowered *Boraginaceae*—the dwarf *Myosotis*, *Cynoglossum amabile*, and best of all, the pale, China-blue *Onosma*, which grows right away down the Tsangpo to the head of the gorges.

After the valley had widened out to over a mile, *Picea* and groves of *Bamboo* appeared for the first time. In the thickets a *Lonicera* dangled scarlet, translucent berries by inch-long threads, and the waxy stems of a *Rubus* showed snowy white against the dark back-

ground of foliage; the sticky, flask-shaped hips of the crimson *Rose* were also reddening.

In such weather, and amidst such surroundings, the mid-day halt by the way-side for lunch was again revived, and pleasant it was indeed to sit there listening to the murmur of the river, the babble of laughing thrushes under the Bamboos, and the wind in the Pines—I had almost written 'Willows,' of which there were plenty on the islands. On September 8, the river having turned from east to south, we saw in the afternoon a welcome sight ahead—the great snowy range of the Himalaya blocking the mouth of the valley (Fig 95), and knew we were only a few miles from the Tsangpo. On the following day, after a longish march, we stood on familiar ground once more; we did not, indeed, reach Tsela, but we could see the white dzong on the bluff overlooking the river, four miles away. It was a brilliant starlit night, warm and still. Were the rains really over? Next day, in brilliant sunshine, we reached our old base, which we had left three months ago. The dry hillsides, flecked with the blue of *Ceratostigma* (which is exactly the blue of the *Onosma*), the fields of gilded corn, and the white buildings scattered over this (comparatively) thickly populated delta made a charming scene. That evening the whole of Namcha Barwa, with its long 24,000 foot ridge athwart the Tsangpo, showed up like an immense crystal against the blue of the Assam sky. It was a month before we saw it again! We spent a day at Tsela, and I took the one walk for which the place is famous—up the hill from the dzong, along the flume to the granite gully, where, in May, the 'Taliense' *Rhododendron* dabbled the forest with rose-pink, down past the hermits' cells, which plastered the face of the cliff like swallows' nests, and so home. But I got little for my pains. Flowers were over. Seeds were not yet ripe. However, I did collect on the scrub clad hillside a few seeds of the large *Morina* previously noticed—though I had never seen the plant in flower. It is a horribly prickly plant, a foot high, with several tightly-packed whorls of flowers. Most of the seeds were gone, but I secured a few (K.W. 6180). It may be quite a good thing; on the other hand, it may not. Next day we floated down the Tsangpo in skin boats, landed, and had only a short march to the monastery. The river was much higher than when we were last here in June, but was falling fast, so that we ran aground on sand banks several times, though our coracle drew only a few inches!

On September 13 we began the ascent of the last range which still divided us from our home in the *rong*. On the way up, seeds of the orange 'Candelabra' *Primula* and of the beautiful woodland, blue *Poppy* were collected. Next day I added the long-tailed 'Soldanelloid' *Primula* which was rather fickle as regards seed; only a moderate percentage of the plants here set any, and those that did were usually content with two or three capsules. Perhaps this range is not quite moist enough for it, though it was moist enough for us! Luckily, the species is abundant and fairly wide spread.

At the top of the pass, in the open pastures, I found ripe seeds of the purple 'Nivalis' *Primula* and the alpine form of the Cherry-coloured 'Sonicifolia' (which lower down is a woodland plant); and these, with the beautiful *Meconopsis simplicifolia*, were added to the "bag." Naturally, there were few flowers. A deep, violet-flowered 'Capitata' *Primula*, reminiscent of the Chinese *P. pseudo-capitata* was passing over; it had rather small but numerous flowers in the head and grew in clumps, amidst grass and shrubs, on banks, in the sub-alpine region. Here, too, the violet *Cyananthus*, now rather woe-begone, still bloomed, and dazzling sheets of the heavenly blue 'Ornata' *Gentian* lined the path. On the open moor, scattered over the turf between tussocks of dwarf *Rhododendron*, were two dwarf plants—a nodding *Sweetia* with uncommonly large, pale, slaty-blue flowers, and an *Aconitum* with dark violet flowers. Both were under three inches high. Still lower down, in the forest belt, a twining *Aconitum*

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, August 15, and September 5, 1925.

with glossy, violet flowers was fairly common, and a Composite with pallid yellow, nodding flowers adorned the grassy banks. We had intended to spend a couple of days at the pass, but the weather was so unsettled that, after spending the night there, and collecting seed of one of the big sulphur Poppies, we continued the descent on the following day. On the afternoon of September 15, therefore, we reached our home in the *rong*, after an absence of just over five weeks. We rested three days at our village. I wanted more seed of the sylvan blue Poppy, also of the orange Primula—it was now or never with this last, for the culms were all buried in the undergrowth or knocked down by wind and rain, and hard to find. Also, there was the rose bog Primula and the moonlight 'Sikkimensis'—seeds of both were ripe. Here, too, and here only, so far as I knew, was found the best of the many *Loniceras*, a ten-foot bush with dark green, hairy foliage and pairs of bright yellow flowers peeping from large, papery bracts. It is a fine sight in full bloom, crowded with its tubular flowers; a compact bush, nothing leggy or straggling about it. In fruit, too, it should be gay with

managed to secure the services of quite an intelligent native to assist me temporarily; and I set him to collect seed of the above-mentioned plants, which he did to my satisfaction.

Then, when we had developed the few photo-

On September 19th we started for the Tang La to collect certain *Meconopsis* and *Primula* seed. It was only a few hours march from our village to a herd's bothy by the pass, straight up the mountain ridge, and we arrived early in the afternoon. We expected some fine weather now, but were disappointed to find it quite as thick as it had been in the summer, though not quite so much rain fell. There was an autumnal sting in the driving showers, too, which were interspersed with violent hail storms. So it continued for a week while I collected seed of the four blue Poppies which are particularly abundant on this range and of several 'Nivalis' Primulas, including the dwarf alpine, like *P. minor*, and the lovely periwinkle Primula, which grows mixed with the 'purple Nivalis' on alpine turf slopes, but it is as easily distinguished from the latter in fruit as it is in flower. I also collected seed of one of the more minute Primulas.

After a week of vile weather we returned to the *rong*, collecting on the way down seed of the white *Lloydia* which in July had carpeted a single alp as though with dwarf Crocuses.

On the following day I dashed off down



FIG. 93.—A SCENE ON THE TIBETAN PLATEAU; 15,000 FEET.



Photo Lord Cardor.

FIG. 94.—RHODODENDRON SP., §TRIFLORUM.

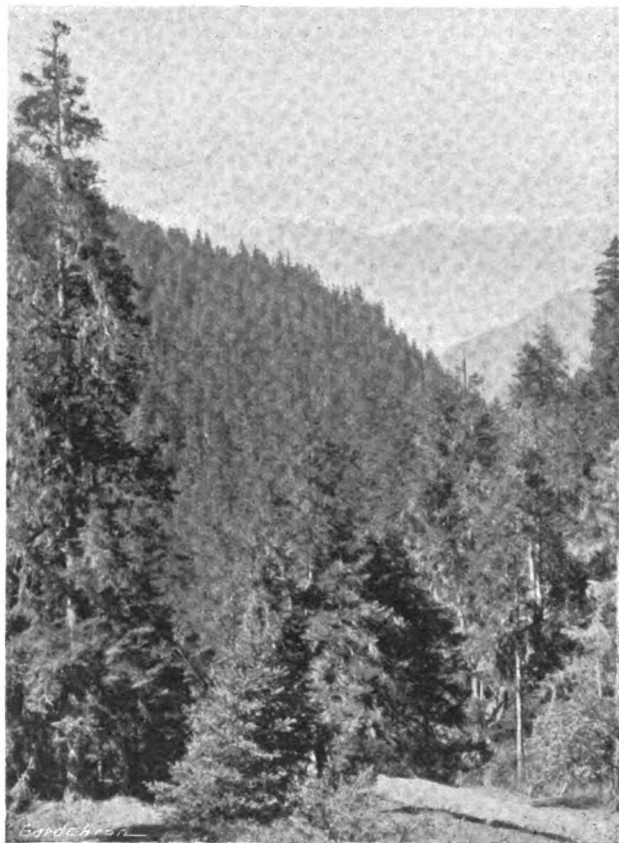


FIG. 95.—PICEA FOREST; HIMALAYAS IN THE BACKGROUND.

scarlet berries, rather enclosed by the bracts (for which reason it needs to be grown high up on the bank so that it may be seen from below); but for some reason or other, it set little seed here, the fruits shrivelling up, there being perhaps insufficient food for all. I

graphs we had been able to take during the northern journey, and cleared up some arrears of work at the base, we started off again on the 19th, and went into camp at 14,000 feet that afternoon. Seed collecting had begun in earnest.

the valley and up towards the next pass to collect seed of the smallest of the yellow Poppies. Luckily I hit off the season admirably and secured ample seed from the dripping woods, together with seed of the fragrant Muscarioid Primula. F. Kingdom Ward.

MESEMBRYANTHEMUM AND SOME NEW GENERA SEPARATED FROM IT.

(Continued from p. 212.)

UPON analysing the Linnean characters as applied to the species Linné enumerates, it becomes evident that there is some incongruity in his definition and that he could not have properly examined the species he described. Because the only species that can be taken into consideration in the selection of a type for the genus are the thirty-five enumerated in the first edition of his *Species plantarum* published in 1753. If these species are examined and compared with his generic characters in the endeavour to determine which of them should be accepted to constitute the type of the genus *Mesembryanthemum*, the following appears to me the best method of arriving at a satisfactory answer to this somewhat complicated problem.

In the first place it is clear from his assigning this genus to the Class Icosandria and Order Pentagynia that the primary essential characters of the genus are that it should have numerous stamens and five stigmas (or styles as he calls them). Therefore we may eliminate from the list of species described by Linné the seven species which have eight to seventeen stigmas and cells to the ovary. These are—*M. calamiforme*, *M. acinaciforme*, *M. restratum*, *M. loreum*, *M. difforme*, *M. linguiforme*, and *M. pugioniforme*, which as Linné himself pointed out do not accord with the generic character of "stigmas and cells of the ovary 5." Of some of these Linné does not mention the number of their stigmas; indeed it is certain that he never had specimens of many of the species he described and that he only knew them from the descriptions and figures in Dillenius's *Hortus elthamensis*.

The next characters of importance to take into consideration are that the petals should be united at the base into a short tube, and the ovary be inferior. Here we are faced with a somewhat curious problem of contradictory characters, which again demonstrates that Linné could not have examined the flowers of the species he described. Out of the thirty-five species he described, only one-sixth of them have a monopetalous corolla, viz.:—*M. nodiflorum*, *M. crystallinum*, *M. geniculiflorum*, *M. noctiflorum*, *M. splendens*, and *M. tortuosum*. All the others have the petals free to the base. And these six species do not accord with his character of the ovary being inferior, for they all have the ovary partly superior, or more than half-superior, and moreover, they all have axile placentas, a character not mentioned by Linné, while all the other species have free petals, an inferior ovary and the placentas on the outer wall or floor of the cells. Therefore, either the character of the monopetalous corolla or that of the inferior ovary must be discarded as one of the principal characters of the genus. I propose to reject that of the monopetalous corolla (petals united into a short tube at the base), since it applies to such a small proportion of the species, and to eliminate these six species from the genus, as their placentation is also quite different.

The fruit is described by Linné as fleshy, but excepting *M. acinaciforme*, the Hottentot Fig and allies, the fruit of all known species is a dry capsule. I very much doubt if Linné ever saw the ripe fruit of any species, for there is no fruit preserved in his herbarium, and I suspect that he ascribed this character to the genus from the statements of others concerning the fleshy edible fruit of the Hottentot Fig. The statement that the fruit is roundish must have been taken from the figures in *Hortus elthamensis*, for the fleshy fruits of *M. acinaciforme* and allies are not "roundish," but elongated obconical or obovoid. Therefore, as the only species with fleshy fruit (*M. acinaciforme*, Linn., which at that date as he then understood the species included also *M. edule* as a variety) does not accord either in its shape or the number and character of its stigmas (which are plumose) with the Linnean definition, this species, as previously mentioned, must be

eliminated from the genus and the character of the fruit being fleshy also discarded as a generic character for *Mesembryanthemum*.

I find that the only species of those enumerated in the first edition of his *Species plantarum* that is represented in the Linnean Herbarium is *M. tenuifolium*, which has the petals free to the base, five stigmas, and an inferior five-celled ovary. But in his *Hortus cliffortianus* Linné enumerated twenty-nine species which he probably saw, although the only species preserved in the Hortus Cliffortianus Herbarium at the British Museum are *M. tenuifolium*, *M. pomeridianum*, and these merely repeat the story, for five of them have eight to seventeen stigmas and cells to the ovary and four have a short tube to the corolla and a partly superior ovary with four to five stigmas and cells, and twenty have the petals free to the base and an inferior ovary with five stigmas and cells to the ovary. Those of course, being the same species as are described in his *Species plantarum*. Therefore as the bulk of the species that it is probable Linné actually saw but may not have examined, as well as of those he enumerated, amounting in all to twenty-two in number, have free petals and an inferior ovary with five stigmas, and as these characters cover the majority of the species at present placed under the genus, I propose that they be adopted for the selection of a type for the genus.

I therefore propose to reject the above-mentioned thirteen species as not strictly conforming with the chief characters of the Linnean definition of the genus, and from the remaining twenty-two species (which all have five stigmas and an inferior ovary with five cells, and the placentas on the outer wall of the cells, and with the exceptions that their corolla is not monopetalous, and their fruit not fleshy, as above explained, agree in all other characters with the Linnean definition of the genus) to select as the type of the genus *Mesembryanthemum* the first species described in the first edition of Linné's *Species plantarum* that (excluding the character of the corolla being monopetalous) conforms with the definition of the genus as given by Linné. This species proves to be *M. umbellatum*, for the four species preceding it (*M. nodiflorum*, *M. crystallinum*, *M. geniculiflorum*, and *M. noctiflorum*) all have, as stated, a short tube to the corolla and a partly superior ovary.

So that *M. umbellatum*, L., may be accepted as being the type of the genus, and with it will naturally be associated *M. tenuifolium*, L. (of which the type is in the Linnean Herbarium), *M. falcatum*, *M. hispidum*, *M. spinosum*, L., *M. tuberosum*, L., *M. glaucum*, L., and allied species.

M. umbellatum, L., will be a very convenient species to take as the type of the genus because, not only do eighteen of the remaining twenty-two species then known to Linné agree with it in general habit and structure, but it likewise accords in these particulars with the majority of the species that have been described since the time of Linné. Therefore the acceptance of *M. umbellatum*, L., as the type of the genus *Mesembryanthemum* will not only prevent the very great changes of nomenclature that would occur if one of the thirteen rejected species were selected in its place, but will necessitate very little alteration in the generic characters assigned to the genus by Linné, the only alteration needed being the omission of the words "corolla monopetalous" and "capsule fleshy," and of course the addition of such details of structure as are omitted from the Linnean description.

In the above I have taken into account only those species enumerated by Linné in the first edition of his *Species plantarum* because they alone are concerned in the founding of the genus. Yet if we examine the forty-five species enumerated in the second edition of that work, and the two others described in the tenth edition of his *Systema naturae* which forty-seven species were all that were known to him, the conclusion above arrived at is in no way affected.

The rejected species I am referring to other genera. N. E. Brown.

To be continued.)

INDOOR PLANTS.

SALPIGLOSSIS IN POTS.

ALTHOUGH this somewhat neglected plant is not so useful for cut flower purposes as many others on account of the sticky nature of its stems, it is nevertheless exceedingly useful for conservatory and house decoration when grown in pots. Of graceful habit, it develops a profusion of flowers of the finest shades of blue and gold, the blossoms being very pleasingly veined.

The *Salpiglossis* is not very exacting in its requirements, and with the exception of watering, it does not call for a considerable amount of attention, especially in the winter. It grows quite well in a temperature of 40° to 45° during the winter. To raise plants for spring and early summer flowering seeds may be sown from the middle of August to mid-September in pots or pans, and germinated in a cold frame.

The seedlings should be placed singly into three-inch pots when they are large enough to handle, which will be in about three weeks to a month from the date of sowing.

Continue to grow them in a cold frame until about the end of October when the pots should be well filled with roots and the plants ready for transference to four-and-a-half inch pots.

Owing to their susceptibility to damping, it is advisable at this period to transfer them to a cool, airy house where watering can be more easily attended to.

Early in the New Year they should be ready for their final potting into six-inch or seven-inch pots. The compost may consist of good loam with the addition of a small quantity of well-rotted dung, wood-ash and lime in some form. When established in their final pots, place a stake to each plant, as this is better for the plant and more easily accomplished than when it is in flower.

Aim at keeping the plants just on the move, and never coddle them, but frost must be excluded. Keep the atmosphere on the dry side, admitting air freely at all times, but guard against cold draughts, which are detrimental to the plants well being.

A certain amount of feeding will be beneficial when the pots are well-filled with roots.

In a trial of these plants carried out at Wisley during 1922-23, the "superbissima" strain was proved to be the most desirable for pot work; the members of this strain combine a dwarf habit with large flowers of many shades.

A full account of the awards made and descriptions of the plants are to be found in the *Journal of the Royal Horticultural Society*, vol. XLIX, Part 1, page 67. J. Wilson, Wisley.

CLERODENDRON FALLAX.

OF the several species of shrubby *Clerodendron* *C. fallax* is most generally cultivated. Cut back plants in their second season give the best results, and flowering earlier than seedling plants, extend the flowering period. The seeds, which should be sown in pans so soon as they are ripe, or early in the year, germinate slowly.

The seedlings when large enough to handle, should be transferred to small pots and grown in warm, moist conditions, potting them finally into pots six inches in diameter.

After flowering, the plants intended for growing on a second year should be kept dry at the roots and rested in a lower temperature, cutting them down to within a few inches of the base, and starting them in heat early in the year.

When the plants break into growth, they should be shaken out and re-potted in receptacles a size smaller, placing them later in seven inch pots.

Clerodendron fallax is a gross feeder, and a strong, well-enriched compost should be used, and the roots liberally fed when the plants are established. It requires considerable space for its proper development; well-grown specimens measure two-and-a-half feet across, from tip to tip of the deep green leaves.

The old plants commence to flower in June, and seedlings carry on the display until late autumn. Fred W. Jeffery.

MARKET INDUSTRY IN THE WORTHING DISTRICT.

A SHORT time since I was spending a few days at Worthing, and as is my usual practice when there is anything of interest in the neighbourhood where I am staying, I decided to visit some of the market nurseries in the district. I obtained a letter of introduction to some of the more noted growers from my friend Mr. Costin, Horticultural Superintendent for West Sussex.

My first call was not very successful: the grower read my letters and received me with all the courtesy one expects a gardener to extend to a fellow gardener. The Tomato crop, he said, was practically over, and the houses were being got ready for Chrysanthemums, and really he had nothing to show me. After a general chat on soils, manures, pests and so forth, I thanked my friend for the pleasant manner he received me and for the information.

My subsequent calls during the week were with one exception, exceedingly interesting and instructive.

The grading and packing of tons of Tomatos into non-returnable boxes was a very interesting sight to watch. Some of the houses contained over 3,000 Tomato plants each. The varieties grown included Best of All, Kondine Red, Bide's Recruit, and Market King.

I gathered from enquiries that the natural soil, when well cultivated and suitably manured, will produce excellent crops, not only of Tomatos but other things as well. There was not much evidence of pests—some white fly, red spider and leaf spot—but these are kept under by good cultivation and the timely use of fumigants and fungicides.

Labour-saving inventions and devices for the spraying and watering of the crops were to be seen in many of the houses. In most places I saw up-to-date systems of airing and heating.

The Grape industry is one of interest and is successfully carried out. The principal varieties grown are Foster's Seedling, Black Hamburg, Gros Colmar, Alicante and Muscat of Alexandria.

Cucumbers were practically over, at least, I did not see many houses of Cucumbers, but what did impress me were the hundreds of thousands of Chrysanthemums which were to be housed for autumn and winter flowering. As for Carnations, their numbers were legion, in all the best varieties and in all stages of growth.

I did not have an opportunity of seeing many orchards in the Worthing district, but I consider there is scope for development in hardy fruit culture. The best varieties of Apples were Early Victoria, Beauty of Bath, Lady Sudeley, Allington Pippin, Cox's Orange Pippin, Lane's Prince Albert and Bramley's Seedling.

At the conclusion of my tour, my friend, Mr. Goring, Horticultural Superintendent for East Sussex, very kindly gave me a day of his valuable time. Our first call was at the County Fruit Station, Lewes, where over forty varieties of Apples, and about a dozen varieties of Pears are grown for demonstration purposes, in regard to pruning, spraying, manuring and so forth.

The following varieties of Apples were carrying very satisfactory crops, namely Bramley's Seedling, Rev. W. Wilks, Coronation, Pomeroy, Lord Derby, Lane's Prince Albert, Allington Pippin, and Beauty of Bath. Of Pears, the best sorts were Beacon, Beurré Bose and Dr. Jules Guyot.

Our next call was at Cherrington Manor, noted for its well kept gardens, which are under the supervision of Mr. Chilvers. The soil here is of a sandy nature, the situation low-lying, and at times very wet. Apples are prone to canker, and Onions subject to mildew, but this latter disease is easily kept in check by a dressing of sulphate of iron. From what we saw, green crops do well, especially Brussels Sprouts. The glasshouses, which are practically new, are admirably arranged in conjunction with the potting sheds and offices. They are well-built with bevelled plates and grooved rafters, and also very economically heated,

with a good system of ventilation and an abundant water supply.

Mr. Chilvers, who designed and superintended the building of the houses, has more than justified his ideas as to what horticultural structures should be, by growing in the houses high-class produce, including Grapes, Peaches, Nectarines, Tomatos, Cucumbers, etc., which have won for him premier honours at the leading Sussex shows.

We finished the day among the market growers in the Horeham Road district. Apples seemed fairly plentiful, but the price the grower received was only about one-quarter what the consumer paid for them. The crops of Tomatos varied considerably, and on the heavy soils white fly, sleepy disease, stripe and other pests have been very troublesome this season.

Still, in spite of all their worries, the market growers of East and West Sussex, as a body, do not appear to be unduly worried. S. Heaton.

NOTES FROM EDINBURGH.

ERICAS now contribute largely to the floral display on the rock garden at Edinburgh. The best of these is undoubtedly that known as *E. vagans* Kevernensis, or more commonly, *E. vagans* var. *St. Keverne*. This variety of the Cornish Heath has another use in the garden, for it makes a very fine edging plant. *E. vagans* alba is also quite good. There are two varieties of *Erica Tetralix* worthy of notice; one, *E. Tetralix alba mollis*, has a varietal appellation sufficiently descriptive, while the other, *E. Tetralix Lawsoniana*, is a dwarf plant with the most delicate of pink flowers. A gem among rock garden plants now in flower is *Verbena chamaedryfolia*, which is treasured for its fine red flowers. Another interesting plant is *Aster sibiricus*, a native of Siberia and north-west America. It is of dwarf growth and bears a quantity of pinkish-mauve flowers.

Blue flowers being always an acquisition to a garden when they are really blue, and not combined with other colours, *Commelina sikkimensis* may be mentioned as having a really blue flower and worth growing. *Satureia montana illyrica* comes from the Mediterranean regions, and produces a mass of mauve flowers which are freely visited by wild bees. In one part of the rock garden *Castanopsis chrysophylla* occupies a prominent position, and at the present time its green, prickly fruits are in evidence. Another shrub which comes into prominence just now is *Potentilla fruticosa*, with its varieties. *Potentilla fruticosa* itself produces flowers of a fine deep yellow in quantity; *P. f. Vilmoriniana* is remarkable for its silvery foliage, and pale yellow flowers, although the base of the petals and the stamens are of a deeper yellow. A variety with pure white flowers is found in *P. fruticosa glabrata*.

In a circular bed the north American *Aster macrophyllus* is planted, and shows the possibilities of this species when so treated. It has heads of white flowers carried well above the foliage to a height of four feet, producing together a very graceful effect.

In the herbaceous border Dahlias, Japanese Anemones and Heleniums are very showy. Of other subjects, *Rudbeckia Goldstrahl* may be commended for its double yellow flowers, while *Chrysanthemum maximum* and its varieties are so well-known as to require no special recommendation for wider cultivation. *Echinops sphaerocephalus* is a rather coarse-growing species reaching a height of six feet, and carrying large, spherical heads of flowers. A similar height is attained by *Senecio sarracenicus* a native of Europe and Siberia. It possesses yellow flowers.

In the frames near the houses *Gladiolus psittacinus* is flowering; this is an interesting species on account of the part it has played in the evolution of the modern *Gladioli*. Crossed with *G. cardinalis* it gave rise to *G. gandavensis*, from which, by further crossing, *G. Lemoinei* was produced in 1878, and *G. Childsii* raised by L. J. Childs, in America in 1882.

In the tropical houses, *Aristolochia gigas*,

—the Pelican flower—is again producing its large, curious, but evil-smelling flowers. Several varieties of *Hibiscus Rosa-sinensis* have been a conspicuous feature of the tropical fernery, throughout the summer. The plants are trained so as to cover a certain area of roof space, thus affording shade to the Ferns below, while remaining themselves a valuable decorative feature. *Rondeletia odorata* has exhibited its delightful reddish flowers in abundance in one of the stove houses, where *Hibiscus Denisonii*, with yellow flowers, and the pink-flowered *H. Scottii* have also been noticeable. A good display of *Ixoras* of different kinds has been maintained in the other stove house, where also *Asclepias curassavica*, and *Manettia luteo-rubra* have produced their red and yellow flowers over a considerable period.

One of the most remarkable events in the corridor has been the lavish display made by *Solanum Wendlandii*, its lilac and blue trusses of flowers being the second crop this season. A distinctive climber in the Rhododendron house is *Bignonia buccinatoria*, which has produced a quantity of large red flowers which harmonise well with the green foliage.

A plant of *Pimelea ferruginea* has been a source of interest in the rock house on account of the freedom with which it produces its round heads of pink flowers. This species is a native of New Zealand, a country which has yielded many valuable flowering shrubs. Quite close to the houses is a specimen plant of *Rhododendron Cunningham's* Sulphur which is flowering out of season. In the spring this plant gave a display of blossom inferior to that of last year, and now there are large numbers of flowers and flower buds all over the plant. The flowers which have opened are very pale, and look "washed-out," instead of being the normal sulphur-yellow colour.

There is also a circular bed filled with *Gypsophila paniculata* *flore pleno*, whose graceful sprays of white flowers are now at their best, while close by is a bed of that rapid growing, but nevertheless pretty, pink-flowered plant, *Polygonum affine*, which has been in flower for some time. Grown in this way, in a mass, it is invaluable for decoration, provided it is kept within bounds. Robert H. Jeffers.

PUBLIC PARKS AND GARDENS.

THE Solihull Rural District Council has decided to purchase sixteen acres of the Malvern Park estate for providing an open space and recreation ground for Solihull parish; also the lodge and garden, the two last at a cost of £350.

WORTHING is well provided with public parks and gardens, in Beach House Gardens, Steyne Gardens, Denton Gardens, Honefield Park and Victoria Park. Beach House Gardens are apparently quite new. They have been well and effectively laid out, and in a few years time they will rank amongst the most beautiful public gardens in the country. A huge rockery garden is a prominent feature and conspicuously situated and planted with a choice assortment of subjects suitable to make it interesting and educational all the year round. Large Rose beds and pergolas are other features of this beautiful park. At the time of my visit there was a grand display of single Dahlias in various colours, and also two large beds filled with *Daturas* interspersed with *Heliotropes* and *Fuchsias*. Trees and shrubs of various kinds are planted indiscriminately and with a view to producing a harmonious effect as a whole in years to come. The condition of this park reflects great credit on the Superintendent and his staff. One suggestion may not be out of place, and that is, if the plants were named it would add to the educational value of the gardens. Visitor.

MANCHESTER Corporation proposes to undertake various works in the public parks during the winter at a cost of £63,816.

VEGETABLE GARDEN.

A TRIAL OF TURNIPS.

I HAVE just tabulated the records of an interesting Turnip variety trial, conducted with the object of ascertaining the time which certain varieties require to reach marketable condition. This, of course, is the condition for which all gardeners aim, whether they are engaged in private or commercial practice. Seeds of the following varieties were sown during the first week in April in fairly rich soil:—Clucas' Extra Early White, Dobbie's Model White, Snowball, Orange Jelly, Extra Early Purple Top Milan, and All the Year Round.

Seven rows of each variety were sown, each row being eight yards in length. The spring of this year was so cold that growth was slow, and it was not until June 11 that I could lift roots for use.

effective, for the seedlings were quite free from the pest, while a control plot near by was badly affected. Mr. Davidson of Rothamsted informs me that the secret of the success of this treatment lies in soaking the testa of the seed with paraffin. A lightning immersion is of no value. *Geo. H. Copley, N.D.F.*

FRUIT REGISTER.

APPLE LANGLEY PIPPIN.

THE quest for the first early Apple that will rank with the best of the later season varieties seems likely to occupy growers for some long time, for although several new early Apples have been shown during the past year or two, none possesses sufficient merit to entitle it to more than passing notice.

Irish Peach must still be considered one of the best of August Apples, but the variety

1898, when exhibited by the raisers, Messrs. James Veitch and Son; Mr. J. C. Allgrove, who has assumed proprietorship of Messrs. Veitch's fruit-tree nursery at Langley, exhibited some remarkably fine specimens of this Apple at the meeting of the Royal Horticultural Society on August 25, and these furnished the material for the photograph from which our illustration was reproduced.

THREE GOOD LATE PEARS.

JOSEPHINE DE MALINES is one of the latest Pears to ripen and a variety of good quality. The fruit is small, with a greenish yellow skin: the flesh is juicy, sweet and of a delicious flavour.

This variety is a very prolific cropper and is best grown as a half-standard, a system of training which suits it admirably.

Another point in favour of this variety is that the fruits ripen after January and until May, in batches, so that, unlike the majority

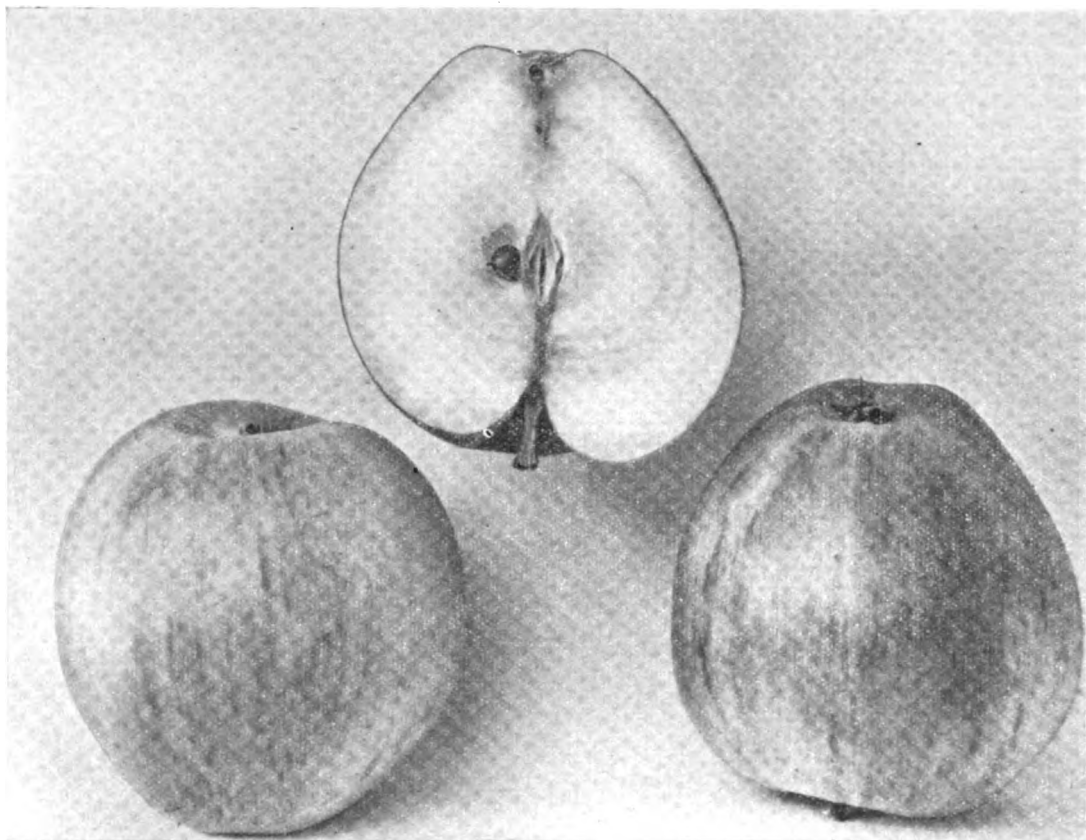


FIG. 96.—APPLE LANGLEY PIPPIN.

The variety Clucas' Extra Early White was an easy first. On that date thirty-four bunches weighing forty pounds were lifted. Snowball followed with thirteen bunches which scaled eleven pounds, and was followed by Orange Jelly, with twelve bunches weighing ten pounds. The second and final lifting took place on June 22, when all the varieties were in excellent condition. Obviously, however, the difference of eleven days between the forwards and laggards places the latter at a serious disadvantage. Each variety was topped and tailed before being placed on the balance.

The following figures give an account of the cropping capacity of the respective varieties over a period of ten weeks:—Orange Jelly, 69 pounds; Clucas' Extra Early White, 58 pounds; Dobbie's Model White, 37 pounds; All the Year Round, 34½ pounds; Extra Early Purple Top Milan, 30 pounds; Snowball, 28½ pounds.

The seeds were immersed in paraffin for ten minutes previous to sowing as a preventive of the Turnip flea beetle. The treatment proved

Langley Pippin (Fig. 96) which comes in a little later, is rather better flavoured, and must be regarded as one of the very best of all the early Apples.

This, however, does not mean that its merits are exceptionally high, but that the flavour is agreeable, the flesh juicy, and, what is a recommendation to some, not hard in texture. As will be seen on reference to the illustration, this Apple is of conical shape, and often a little longer on one side than the other, giving the fruit a one-sided appearance. The flesh is white, and the core is comparatively small. It is a pretty Apple, the skin on the side next the sun having crimson stripes on a red ground, whilst the shaded side is a mellow yellow colour. It was raised from Cox's Orange Pippin crossed with Mr. Gladstone, and to the latter parent it doubtless owes its shape, whilst the other parent has influenced the size. The tree makes very healthy growth and crops fairly well.

This Apple received the Royal Horticultural Society's Award of Merit on August 23rd,

of Pears, a succession of ripe fruits may be obtained over a long period.

Beurré de Naghin, another good late Pear, is one of the most precocious varieties in fruiting I know. I have seen nine large fruits on a three-year-old tree, and I once counted five fruits on a two-year-old tree. To obtain the best flavour in the fruits this variety needs to be worked on the Quince stock. It is a large, roundish Pear of golden yellow colour, with a juicy, melting flesh. It may also be grown as a pot specimen, in which case it should be associated with the variety Conference, and then large crops will be assured. Its keeping qualities are such that it may be had for dessert up to mid-March.

President Barabe is a sweet and highly-flavoured Pear that keeps well until the end of March. The tree is very fertile and produces medium-sized, greenish-yellow fruits. It is said to have been raised by M. Sannier of Rouen from the seed of Bergamotte Esperen and was introduced to this country in 1877.

Bunyard, in his *Handbook of Fruits*, states that the flavour is more refreshing than in most Pears of its season.

APPLE WINTER MAJETIN.

This fine culinary Apple keeps until April or the end of May. The tree is a good cropper, although in growth it is not extra robust. The fruit is of medium size and is ribbed round the crown. The rest of the skin is smooth, dark green and covered with brown on the side next to the sun. The eye is closed and the stalk only three-quarters-of-an-inch long. The flesh of this late Apple is greenish-white, firm, crisp and pleasantly flavoured. It is a most desirable variety on account of its heavy cropping qualities. *Pomoni.*

APPLE JAMES GRIEVE.

With me, this Apple is carrying a particularly nice crop this season. Unfortunately, I have only a few trees, many others having been grubbed some years ago because they were reduced to mere wrecks by severe canker on the young wood. At that time the variety did not sell well, but since then, discriminating people have found that it is much more worth eating than Worcester Pearmain, which is ripe at the same season, and the demand has increased in consequence. I have since learned from another grower that James Grieve needs starvation treatment. If it receives too much nitrogenous manure it makes rank wood which cankers easily, and produces large fruits which are soft and lacking in colour. Certainly the starvation treatment seems to have answered with my trees. This is the most delicious of mid-season market Apples, and there is none which crops more regularly. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. (111-116).

(Continued from p. 215.)

ENGLAND, SOUTH.

SURREY.—The fruit crops are of a fair average amount. Apples, the most important crop of all, are very good and plentiful, most of the trees being heavily laden with clean fruits, and they are making healthy growth. Pears, generally, are a very thin crop. Plums and Cherries were not very plentiful, and these trees were much infested with aphids. Strawberries and Raspberries have been excellent. Gooseberries and Black Currants were very heavy crops, in fact, small fruits of all kinds have done well. Outdoor Figs, generally a precarious crop, are this year very good indeed. Walnuts and Filberts are about the average in yield. Our soil is somewhat light, overlying gravel and chalk, and at a good elevation. *John H. Shipley, Haling Park Gardens, South Croydon.*

—After the dull, wet autumn of 1924, the quantity of blossom on Apple, Pear and Plum trees was astonishing. Many of the flowers set, and until the drought of May to July we looked like having bumper crops. The drought thinned Pears very much, and Apples and Plums severely. Small fruits were abundant and good. Cane fruits were late in developing owing to hot weather, but they improved later and became good. Strawberries were late and not over plentiful, but an improvement on the crops of 1923-24. Silver-leaf on Plums has increased this year more than usual. Has the wet weather of 1924 any bearing on this disease? The soil is a dark, close loam, almost without grit or stone, overlying what is locally known as charrick, a sort of soft lime stone. *John Edwards, Felcourt Gardens, Lingfield.*

—After a sunlight deficiency in both the autumn of 1924 and the spring of this year the fruit crops suffered greatly from drought

in June and July. My garden is 300 feet above sea-level, on iron-stone sand. *Will Tayler, Peace, Ashted Lane, Godalming.*

—At the time of blossoming the Apple crop gave promise of being a very heavy one, but many fruits dropped while setting, although a medium amount of fruit remained on many varieties. Bramley's Seedling, Keswick Codlin and some other culinary Apples are carrying good crops. Dessert varieties such as Blenheim Pippin and Cox's Orange Pippin are scarce; many of the earlier varieties are better cropped. Pears are very scarce; very few of the Pear trees showed any bloom. Plums blossomed well, but the cold weather caused the fruits to set badly. Some of the Gage trees on walls are carrying small crops, but trees in the open have but very few fruits. There were a few Cherries in this district, but at Gatton, they were a failure. The Apricot blossoms failed to set, so this fruit is very scarce. Small fruits were, on the whole, good, especially Red and Black Currants and Gooseberries. There was a good average crop of Strawberries of early varieties, but the berries of later sorts did not swell to a very large size. Nuts are scarce. *J. Collier, Gatton Park Gardens, Reigate.*

—The fruit crops are disappointing considering the fine show of bloom and the poor crops of last year. Peaches, Pears and Plums are failures. Apples, fortunately, are an average crop, and all soft fruits have been good excepting Strawberries, which cropped most unevenly and were quickly over. Walnuts are another failure, but Filberts are fairly plentiful. Our trees have made good growth, and are cleaner than they have been for some years past. The soil is a heavy clay. *F. Jordan, Ford Manor Gardens, Lingfield.*

—The Apple crop may be considered satisfactory on the whole, nearly all varieties bearing an average number of good fruits. Pears and Plums are very scarce, which is surprising considering the amount of blossom on the trees in the spring. All small fruits were exceptionally good considering the six weeks of drought in early summer. The Strawberry crop was splendid, but owing to the drought the season was about ten days shorter than usual. Our soil is very shallow and light in texture, the subsoil being chalk. *H. Prince, Polesden Lacey Gardens, Dorking.*

SUSSEX.—The quality of Apples is given as "bad" owing to the prevalence of scab, but this does not affect all varieties. Some kinds will be of good quality. Small fruits are returned as "average," owing to light crops of Raspberries and Black Currants. Gooseberries and Red Currants, on the other hand, were over average quantity and of good quality. It is a very disappointing season. Blooming of all kinds of fruit was very profuse, but it was followed by abnormal dropping of fruit, which continued through the drought. The soil consists of sandy and clayey loams of the Hastings Beds. *E. M. Bear, Mayham Down, Hailsham.*

—Although there was a wonderful show of bloom, the fruits did not set, notwithstanding, we have hives of bees under the trees. The conclusion I come to as to the cause of the failure is that the lack of sun in 1924 resulted in unripened wood. Strawberries were affected with disease last year and looked very sickly during the spring, but grubicide was used on the ground before planting, and afterwards a dressing of basic slag was applied with good results. Raspberries were not so vigorous as usual, and the fruit was small but abundant; the dry June was, I think, the cause of this. Gooseberries and Currants of all kinds were very good. *Leon Squibbs, Stonchurst Gardens, Ardingly.*

—The Apple and Pear crops were seriously damaged by a terrific hailstorm which passed over this locality when the trees were in bloom, this same storm also destroyed a promising crop of Plums. Codlin Apples and those which flowered very late are carrying good crops of clean fruits, but these represent a

minority only of the varieties grown here. Of such kinds as Bramley's Seedling and Lane's Prince Albert about one tree in a dozen is carrying an average crop of fruit. Strawberries are much affected by disease in the district, and therefore have been a failure. Raspberries were a fine crop of large, handsome berries. Currants of all sorts were good and plentiful although much fruit dropping took place in June. Apricot trees produced an abundance of blossom, but no fruits set in spite of the fine condition of the trees. *E. Markham, Gravetye Manor Gardens, East Grinstead.*

—The Apple crop is a record one, the varieties Warner's King, Charles Ross, Ribston Pippin, Lane's Prince Albert, Blenheim Orange, and Keswick Codlin being especially good. Pears are a failure, while Plums are only a fair crop, excepting Early Rivers, which was very good. Cherries, both sweet and Morello, were below the average in yield. Of bush fruits, Gooseberries were only fair, Red Currants fair, while Black Currants were most satisfactory especially Boskoop Giant. Of Raspberries we had enormous crops and the berries were of splendid flavour. Strawberries were a complete failure, also Peaches and Nectarines. The soil is a heavy loam over stiff clay. *Charles Harris, Old House Gardens, Coolham, Horsham.*

HOME CORRESPONDENCE.

Potato Blossom.—Your delightful little paragraph (p. 162), on the wealth of Potato blossom this season reminds me of an amusing incident. Some years ago I had charge of the gardens and policies owned by a stock exchange magnate who was a great lover of flowers, and whose daily buttonhole was always a subject of much interest to his friends. While taking his constitutional walk one morning before breakfast, he found me in the kitchen garden among the Potatoes. I had culled a number of the blossoms which were then at their best, and I showed him them. He was surprised and astonished at their great beauty, and when I suggested he should have his buttonhole that morning selected from the Potato patch, he laughingly agreed. He went to business that day, and as usual, his buttonhole came under review. Nine times out of ten one or other of his friends could name the flowers comprising his buttonhole, but on this occasion not one—of course they were not experts—had the faintest idea of the name or the species of the flowers. My proprietor kept them guessing and re-guessing and at last gave the information that the flowers were the blossoms of the humble Potato. The laugh was loud and long, but the astonishment expressed at the beauty of the blooms lasted for many a long day. *John M. Simpson.*

Hibiscus syriacus.—An error has crept into my notes on this shrub in *Gard. Chron.*, September 25, p. 186. Commenting on the superiority of those with single flowers the note should read: "especially prominent among those with single blossoms are Snowdrift, etc." *A. O.*

French Tomatoes.—Your note on p. 181 on the revival of Tomatoes in France recalled to my mind the quality of the Tomatoes I saw exposed for sale in the markets and shops in Paris, during a recent visit. The fruits were all misshapen and of large size, quite different from the round, uniformly-sized Tomatoes in this country. Possibly, these irregular, corrugated fruits are of better flavour than our own, but to one acquainted with the home-grown product they seemed coarse and uninviting. Whilst the sale of salads generally seemed to be very extensive in the French metropolis, Tomatoes appear to be in little demand. This is somewhat surprising, seeing that in the southern districts of France, at least, growers would have a better opportunity than us of cultivating this vegetable with little fire-heat in houses, whilst a big crop would undoubtedly ripen out of doors. *T.*

SOCIETIES.

ROYAL CALEDONIAN HORTICULTURAL.

SEPTEMBER 9, 10 and 11.—The Royal Caledonian Horticultural Society was fortunate in being able to secure the spacious Industrial Hall, in Annandale Street, for its International Show on the above dates. Although the hall is not on a tram route and is not situated in a pretty part of the fine City of Edinburgh, it served the purpose admirably, and the show was well attended. The opening ceremony was gracefully and graciously performed by H.R.H. the Duchess of York, who spent an hour or so in the hall, accompanied by Mr. Robert Fife, the President, and other officials of the Society. Unfortunately, the weather on the opening day was very wet and cold—it could hardly have been worse—but the people crowded into the show in a manner that must have gratified the Council.

The exhibition itself was a great success, exceeding in extent the International Show held in Edinburgh in 1905. The Industrial Hall, which has one-and-three-quarter acre of floor space, was filled with exhibits and an additional tent had to be requisitioned to accommodate the vegetables. The trade displays were splendid, adding materially to the horticultural success of the undertaking. Grapes were extensively and finely shown, and hardy fruit exhibits were far better than anticipated. With a few exceptions the plant exhibits in the classes were not of a high order of merit, but the Gladioli, Sweet Peas, Roses, Carnations, Dahlias, Asters and other florists' flowers were unusually good.

From the point of view of internationalism the show failed to reach our expectations; there were numerous exhibits from England, and several from Ireland, but the bulk were from Scotland, and as far as we could discover, no other countries were represented. There were 371 classes in the schedule, and in the majority of them the competition was keen.

The Royal Horticultural Society sent a deputation consisting of Sir William Lawrence, Mr. W. Cuthbertson, Mr. E. A. Bunyard, and Mr. W. R. Dykes, who made awards independent of those made by the Scottish Society.

During the evening of the first day of the Show, the Royal Caledonian Horticultural Society entertained the R.H.S. deputation, the judges, members of the Corporation, representatives of the Horticultural Trades' Association, the Glasgow and Perth Horticultural Societies, the lay and horticultural Press to dinner at the North British Hotel. Mr. Robert Fife presided, and those present included the Lord Provost of Edinburgh, Sir John Reid, Sir William Lawrence, Mrs. Fife, Miss Burton, Mr. and Mrs. W. Cuthbertson, Mr. and Mrs. Dykes, Mr. N. E. Barnes, Mr. F. Jordan, Mr. E. Deal, Mr. A. J. Harrison, Mr. Jeffery (the Edinburgh Parks Superintendent), Prof. Wright Smith, and Mr. R. C. Harrow, from the Edinburgh Botanic Garden; Mr. W. J. Thomson, Miss Todd, Mr. J. Alexander, Mr. D. Mackenzie (Secretary), Mr. R. Stuart, Mr. James Whytock, Mr. David King, Mr. G. M. Taylor, Mr. C. H. Curtis, and Mr. J. S. Brunton.

The toast list, following "The King," consisted of "The City of Edinburgh," proposed by Mr. R. Fife and replied to by the Lord Provost. "The Royal Caledonian and Kindred Society," proposed by Mr. J. S. Brunton and responded to by the President; "Kindred Societies," given by the veteran Mr. David King and replied to by Sir William Lawrence, and Sir John Reid, and Mr. Lester Morse (of Messrs. C. C. Morse and Co., San Francisco); "The Judges," proposed by Mr. W. J. Thomson and replied to by Mr. N. F. Barnes; "The Horticultural Trades' Association," which Mr. J. Jeffery proposed and to which Mr. E. J. Deal responded; "The Press," given by Mr. W. Cuthbertson and responded to by Mr. J. W. Herries; and "The Chairman," very charmingly proposed by the Rev. D. C. Stewart.

We offer our congratulations to all concerned

with the organisation and conduct of this great show—the finest ever held in Edinburgh—and especially to Mr. R. Fife and Mr. Donald Mackenzie.

PLANTS.

VISCOUNTESS COWDRAY (gr. Mr. W. Smith) Dunecht, Aberdeen, won the first prize for a group of plants. The display consisted chiefly of bright Codiaeums, Caladiums, and Dracaenas. The only flowering plants used were a few Begonias. As the schedule did not require the group to be arranged for effect, criticism is disarmed, so we confine ourselves to the observation that if greater care had been taken to provide a pleasing margin and to hide the somewhat obtrusive flower pots, the exhibit would have been far more attractive.

Second prize fell to the Rt. Hon. the EARL OF MORAY (gr. Mr. James McKinnin), Donibristle Park, whose circular group contained Liliiums, Hydrangeas, Statice and Pelargoniums, among other flowering plants, with an accompaniment of foliage plants. The general arrangement was good, but here also flower pots were too obvious.

There was quite good competition in the class for six plants suitable for table decoration, and here the chief award was won by Mrs. G. MACKINNON (gr. Mr. J. Easson), Killin, for neat Codiaeums, Cocos Weddelliana, Aralia elegantissima, Pandanus Veitchii, and Dracaena Lord Wolseley; second, Sir W. YOUNGER (gr. Mr. A. Waugh), Moffat; third, A. M. WILSON Esq. (gr. Mr. J. MacKinnin), Roundelwood, Crieff.

The class for three stove or greenhouse plants also brought out a keen competition, and here the leading prize winner was the EARL OF MORAY who had large, freely flowered examples of Statice profusa and double Petunia, and a scarlet Pelargonium; three good Begonias secured second prize for Miss KENNEDY (gr. Mr. B. McWeeney), The Old Farm, Colinton; while a pyramidal Fuchsia, a large Liliium speciosum, and a large Begonia Pearcei, shown by Mr. J. DOUGLAS, Royal Victoria Trust, Liberton, were awarded the third prize.

The best pair of Coleuses were finely coloured bushes over a yard through, shown by Mrs. E. H. BEVERIDGE (gr. Mr. Peter Reid), Beachwood, Kirkcaldy. Three tall and handsome Codiaeums shown by FRANK J. USHER, Esq. (gr. Mr. J. Notman), Douglas, Cockburnspath, secured the leading award for three ornamental foliage plants; the second prize falling to VISCOUNTESS COWDRAY, for very large specimens of Cordyline indivisa, Vitis Henryana, and the most wonderful specimen of Abutilon Savitzii we have ever seen; it was about nine feet high and six feet through, furnished right down to the tub, and finely coloured; third, the EARL OF MORAY. The last named competitor showed the best three Dracaenas.

Mr. T. LEAN, Anniston, scored for single-flowered tuberous Begonias, while W. J. CAMPBELL, Esq. (gr. Mr. W. S. Howieson), Dolphinton, led for three double-flowered specimens, but the appearance of his fine flowers was marred by the heavy stakes used in supporting them. Mr. J. IRVINE, Gorebridge, led for a specimen Fuchsia with a freely-flowered pyramid. VISCOUNTESS COWDRAY showed the best three exotic Ferns, with two plumose Nephrolepis, and Polypodium aureum, and was also first for scarlet Pelargoniums. The best of several sets of three Pelargoniums was the one shown by Mr. J. DOUGLAS, Liberton, and the same competitor led for a pair of Hydrangeas with huge specimens in tubs a yard in diameter; one of the plants was very poorly flowered. Major C. L. GORDON (gr. Mr. J. Duff), Castle Douglas, was the only exhibitor of two pots of Vallota purpurea, and was awarded first prize for an excellently-flowered pair.

The three tables of Begonias were very attractive, and the first prize collection from Mr. MICHAEL RAE, Fermelia, Biggar, consisted of fine flowers on single stemmed plants, but the effect was spoiled by the long wires used to hold up the blooms; second, Mr. J. CAMPBELL (gr. Mr. W. S. Howieson), Dolphinton; third, F. WARRACK, Esq., Carnwath.

ROSES.

The best collection of Roses arranged on a space ten feet by five feet was from Messrs. JAMES FAIRLEY AND CO., Cairney Hill, Fifeshire; the baskets of Madame E. Herriot, Golden Emblem and Emma Wright and the columns of Mrs. F. Usher, Los Angeles, and Miss Willmott were particularly effective. For a collection of garden and decorative Roses Major R. E. DAVIES (gr. Mr. E. Penfold), Kirkcudbright, was the first prize winner, with pleasing bunches of K. of K., Madame E. Herriot, Mrs. Wemyss Quinn, Lady Roundway and others; second, Mr. JAMES DOUGLAS.

The five entries in the class for six baskets of decorative Roses made a brave show, and the premier award was won by Mr. CHAS. GREGORY, Chilwell, Notts, with bright, clean flowers of Independence Day, Louise Criner, Lady Inchiquin, Mabel Morse, Madame Butterfly and the brilliant Golden Emblem. Messrs. THOS. SMITH AND SON, Stanraer, won second place with a capital set of Betty Uprichard, Emma Wright, Mrs. Tom Smith, Lady Pirrie, Mrs. Wemyss Quinn, and Madame E. Herriot. Third prize fell to Mr. R. C. FERGUSON, Dunfermline, with Madame A. Chateau, Donald McDonald, Ophelia, Mrs. Wemyss Quinn, Lady Pirrie and Caroline Tesout, all in good condition.

Mr. J. NORMAN led for twelve vases of Roses and included excellent blooms of Madame E. Herriot; second, Messrs. RUSSELL, Rosegarth, Newton Mearns. The last named competitor led for six vases of Roses and also for three vases. Messrs. J. FAIRLEY AND CO. were third in the class for six vases of cluster Roses, which, despite the regulations, were not labelled; Mr. R. C. FERGUSON, third.

Several classes were provided for the display of Roses on boards, and here the competition was very keen. Mr. SANDY DICKSON, Belmont, Co. Down, showed the best three dozen blooms in not fewer than twenty-four varieties, and his admirable set included fine specimens of Shot Silk, Oliver Mee, Lady Inchiquin, and Marjorie Bulkeley; second, Mr. C. GREGORY; third, Messrs. ADAM AND CRAIGMILE. Mr. S. DICKSON was equally successful in the class for a dozen new Roses in which he had Wm. Kordes, Shot Silk, Richard E. West, Lord Allenby, America and Betty Hulton in good form. VISCOUNTESS COWDRAY led for twenty-four Rose blooms, with Mr. RUSSELL, second. First prize for a dozen blooms fell to Mr. J. PATERSON, Langton. For a dozen blooms of a red or crimson Rose, Mr. W. FERGUSON, Dunfermline, led with Lieut. Chauré; Messrs. ADAM AND CRAIGMILE's set of Mrs. H. Bowles won first prize for twelve blooms of a pink Rose; the best twelve blooms of a yellow variety were Mabel Morse, shown by Messrs. D. AND W. CROLL, Dundee, while Frau Karl Druschki, as shown by Mr. C. GREGORY, was the best white Rose.

SWEET PEAS.

Sweet Peas were shown extensively, and considering the date, in capital condition also Mr. J. A. GRIGOR, Duff House Gardens, Banff, was a successful competitor, winning first prize for twenty-four bunches, distinct, with a very fair set, although some of the blooms showed signs of untoward weather: the best varieties were Jean Ireland, Charming, Hebe, Elegance, Mrs. Tom Jones, Majestic Cream, Powerscourt, Dignity, Valentine, Mrs. Arnold Hitchcock, Radiance and Youth; second, Mr. H. HARPER, Kilmalcolm. Mr. GRIGOR led for a dozen bunches with rather better flowers, winning comfortably from LORD COCHRANE OF CULTS and Messrs. TORRANCE AND HOPKINS, Busby.

For three bunches, Mr. G. BALLINGALL, Dunbarton, led in a keen competition.

The best crimson variety was Unwin's Crimson shown by Mr. ROBERTSON, Stanraer. The Hon. CLIVE PEARSON, Kenmay, showed Hebe as the best pink variety, and also led in the lavender class with a very fine bunch of Powerscourt; J. S. MENZIES, Esq., Balmullo, Leuchars, led for a white variety with Edna May Improved. Mr. BALLINGALL was most successful in the cream class with Matchless, the variety shown

by most competitors; Mr. GRIGOR led for an orange-scarlet variety with Royal Scot; A. R. STENHOUSE, Esq., Biggar, scored for a maroon variety, with Warrior; in the purple class Sir W. H. MAY led with Purple Perfection in fine form; in the "any other colour" class Mr. GRIGOR came first with Mrs. A. Hitchcock.

LORD COCHRANE OF CULTS (gr. Mr. James Smith), Ladybank, was a capital first prize winner in the open class for one dozen bunches of Sweet Peas, leading with fresh, clean flowers of Rosy Morn, Mrs. A. Hitchcock, Tangerine Improved, Jean Ireland, Grenadier, Austin Frederick, Elegance, Dream, Hawmark Salmon Pink, Charming, Mrs. Tom Jones, and Edna May Improved; second, Sir W. MAY (gr. Mr. J. Carn), Boughtrigg, Coldstream; third the Hon. CLIVE PEARSON.

Mr. G. BALLINGALL led in a class for six bunches, distinct; second, Mr. D. CORRELL, Busby.

DAHLIAS AND CHRYSANTHEMUMS.

Dahlias constituted a very bright feature of the show and the closeness of the competition demonstrated the keenness of the growers. The best six bunches of Cactus Dahlias, distinct, came from Messrs. CAMPBELL AND SONS, Blantyre, who had excellent blooms of Mary Purrier, Pearl, Mrs. C. Gillat, Silverhill Park, F. W. Fellowes, and Mons. Tisdale; second, Messrs. TORRANCE AND HOPKINS. Mr. C. JENKINS led for twelve vases of Collette Dahlias with clean, large specimens of Levenbank, Tuskar, Glenavon, Aerial, Marion McLay, Gordendale, Linnet, Helen, Sunset and Courat St. Winning; second, Mr. R. GRANTS. Mr. JENKINS, Cambuslang, had the best three vases of Collette Dahlias showing Roma, Aerial, and Marion McLay; the same competitor won first prize for a dozen vases of Pompon varieties, and a similar award for six vases, some of his best flowers being San Toy, Nellie Broomhead, Little Beeswing, Sylvia and Nouveau; Messrs. CAMPBELL AND SONS were second in the twelve vases class. Mr. ROBINSON, Berwick; Mr. R. GRANTS, Boness; Mr. LOWRIE, Boness; and Messrs. CAMPBELL AND SONS were successful in several other classes.

Messrs. TORRANCE AND HOPKINS won the City of Edinburgh first prize of £8 for a collection of Chrysanthemums arranged on a table twelve feet by eight feet, facing all ways. Some good flowers were shown, and the centre display of Saracen was attractive.

Mr. C. JENKINS was the most successful exhibitor in the class for a dozen bunches of early flowering Chrysanthemums, showing large blooms of popular sorts. In one class for six bunches of disbudded flowers Mr. JENKINS led, and in another class Mr. LAIDLAW, Mardens, Ayrshire, was successful.

GLADIOLI AND CARNATIONS.

Gladioli were superbly shown by Messrs. G. MAIR AND SON, indeed, we do not remember to have seen such magnificent spikes as this firm displayed, while the new colours of some of their seedlings were very distinct and attractive. Messrs. MAIR led for two dozen spikes of extraordinary fine quality, the blooms of large size and substance, and often as many as twelve expanded blooms on a spike; Queen Mary and King George were lovely, while Rosabelle Amos, bronze and cream, and David Airdrie, deep pink and white, were delightful new sorts. Messrs. D. AND W. CROLL came second, and Mr. D. WHITELAW, Laurencekirk, third. The last named exhibitor led for a dozen spikes of Gladioli with a fine set, in which Queen Mary, Janet and Apricot—the last a delicate orange shade flushed with pink—were conspicuous; Mr. W. AIRDRIE, second. Mr. WHITELAW was also most successful in the class for six spikes; while Mr. H. W. MILLAN, Helensburgh, gained first prize for Primulinus varieties.

Mr. C. ENGELMANN was the only exhibitor in the principal class for Carnations, where the schedule required a display arranged on a space ten feet by five feet, and facing all four ways. Such a display is difficult to arrange, and once arranged very difficult for the attendant to look after. The chief award of £10

was made in favour of Mr. ENGELMANN, whose pleasing collection included the varieties Tarzan, Topsy, Saffron, and White Enchantress, in fine condition.

Perpetual-flowering Carnations were capitally shown in smaller classes, and Mr. W. CORRELL, Doum, Perthshire, was easily first for a dozen bunches, his Saffron and May Day being especially good; the EARL OF AIRLIE (gr. Mr. J. Fadyen), Kirriemuir, second. Messrs. CAMPBELL AND SONS showed the best dozen vases of border Carnations, but in the several classes devoted to these flowers it was evident that the blooms had passed through unkind weather.

Mrs. REID, Milnathort, showed the best dozen vases of hardy flowers in the amateurs' section, and included some good Chrysanthemums.

There were numerous classes for Stocks, Asters, Marigolds, Phloxes, Pentsemons, Pansies and Violas, and in all these the competition was keen.

FLORAL DESIGNS.

One class only was provided for a decorated dinner table; in this the table provided was ten feet by five feet. There were eight competitors, and first prize was awarded to Mrs. G. MACKINNON (gr. Mr. J. Easson), Killin, for an arrangement in which Gerberas and Codiaem leaves were the principal subjects used, if we except the corner vases of Cattleya Harrisonae which gave a colour note quite out of keeping with the rest of the design. Second prize was awarded to Mrs. RUSSELL, Newton Mearns, for a rather stiff arrangement of Irish Elegance Roses; and third prize to Col. GRANT (gr. Mr. M. J. Macdonald), Biel, Prestonkirk, for a sparse design in red Carnations. None of the designs was first-rate, but why the slightly heavy but brilliantly-coloured design in Orchids arranged by Miss GIBSON, was entirely passed over by the judges it is difficult to understand.

Messrs. LEARMONT, HUNTER AND KING, Dumfries, were most successful in the class for one brides' and two bridesmaids' bouquets, followed by Mr. W. HOLMES, Helensburgh.

GRAPES.

The EARL OF STRATHMORE (gr. Mr. Donald McInnes), Glamis Castle, worthily won the fifty guinea Thomson Challenge Trophy for eight bunches of Grapes, as well as the Gold Badge and six pounds in cash. This was a grand exhibit consisting of large berried, beautifully coloured bunches of Muscat of Alexandria (10), 8½ and 9; Mrs. Pince (9), 7½ and 8; Alicante (8), 6½ and 6¼; Gros Maroc (8), 6 and 6¼—the figures in brackets give the possible maximum points, and the others the actual points awarded. It will be seen, therefore, that the total points were 58½ out of a possible 70. The best bunch of Muscat of Alexandria was awarded *The Gardeners' Chronicle* Medal, offered for the best bunch of Grapes in the show. Mr. McInnes used Montbretias, pale pink Penstemons and low vases of Sweet Peas as decorative material. The second prize was won by W. CURRIE, Esq. (gr. Mr. Chas. Traill), Castle Levan, Gourock, who had a capital set that secured 55½ points out of a possible 72; third prize was awarded to the EARL OF BALFOUR (gr. Mr. G. F. Anderson), Whitley Lane, who had big bunches of Alicante, Directeur Tisserand and Gros Colman, and secured 53 points out of a possible 68.

The MARCHIONESS OF TWEEDDALE (gr. Mr. Alex. McBean), Yester, Gifford, had the finest four bunches of Grapes, excelling with handsome clusters of Muscat of Alexandria (2), well-coloured, and Alicante (2); second, Mr. W. J. ORR, Tynningham Gardens, Prestonkirk, with Muscat of Alexandria and Black Hamburg; third, C. A. HAMILTON, Esq. (gr. Mr. W. A. McVea), Duntocher, Dumbarton, with Gros Colmar and Muscat of Alexandria. The EARL OF STRATHMORE led for a pair of bunches of Muscat of Alexandria with fine-berried bunches of capital colour; second, VISCOUNTSSE COWDRAY; third, C. A. HAMILTON, Esq. The EARL OF STRATHMORE was also the most successful exhibitor of one bunch of Muscat of

Alexandria in a severe competition where N. NISBETT, Esq. (gr. Mr. W. Armstrong), The Drum, Gilmerton, and W. CURRIE, Esq., were placed second and third respectively; eleven competitors.

Black Hamburg Grape is always well-shown at Edinburgh, and in the class for three bunches Brig.-Gen. J. A. HOWIESON CRAWFORD (gr. Mr. W. Airdrie), Dunlop House, Dunlop, was the winner of the first prize out of eleven entries; he had large-berried, deeply-coloured clusters; the EARL OF STRATHMORE had to be content with second place; Mr. DUNCAN BUCHANAN, Forth Vineyards, Kippen, third. The EARL OF BALFOUR had the finest bunch of Appley Towers, R. E. BALLANTYNE, Esq. (gr. Mr. H. Begg), Ascog, Bute, coming second. For one bunch of Gros Colmar, the EARL OF BALFOUR led, with W. CURRIE, Esq., second, and Mr. BUCHANAN, third; the premier bunch consisted of very large berries.

Col. FERGOUSON BUCHANAN (gr. Mr. Walter Parry), Bowling, was awarded first prize for a pair of bunches of Madresfield Court, the berries finely coloured and beginning to shrivel, but not over large; R. E. BALLANTYNE, Esq., second, with fine berries but lacking in colour; W. CURRIE, Esq., third. Col. F. BUCHANAN also had the best single bunch of Madresfield Court, with R. E. BALLANTYNE, Esq., second, and W. CURRIE, Esq., third. For a pair of bunches of Alicante the EARL OF BALFOUR was again premier prize winner in a competent class; Mr. W. BUCHANAN, second, and Mr. JAMES ORR, third. For one bunch of the last named variety the EARL OF BALFOUR was also the first prize winner, with Mr. JAMES ORR and the MARCHIONESS OF TWEEDDALE following in the order of mention.

For a pair of bunches of "any other" black Grape the EARL OF BALFOUR once more occupied the leading position, showing well-furnished bunches of Directeur Tisserand; The MARCHIONESS OF TWEEDDALE followed with Lady Downe's Seedling, and Mr. W. Gow, Dalmauir, came third with Alnwick Seedling. In the "any other white" class Mr. D. BUCHANAN won the leading award with delightfully coloured, handsome clusters of Pearson's Golden Queen, a variety not often seen these days; A. S. WATT, Esq. (gr. Mr. R. A. Allan), Whiting Bay Hotel, Arran, second, with Mrs. PEARSON, and Major C. A. GORDON, third, with large-berried bunches of Buckland's Sweetwater. The best bunch of Black Grapes "for bloom" was a small cluster of Appley Towers, shown by R. E. BALLANTYNE, Esq.

TABLE OF DESSERT FRUITS.

In the important class for a decorated fruit table, where twenty-four dishes of fruits in no fewer than seven distinct kinds were required it was unfortunate that there was only one exhibitor, especially as the City of Edinburgh Corporation offered £15, £10, and £5 respectively as prizes, and the Royal Horticultural Society added the Veitch Memorial Bronze Medal and fifty shillings to the premier award. The successful exhibitor was the EARL OF BALFOUR, K.G., Whittinghame, Prestonkirk (gr. Mr. George F. Anderson), who showed a fine collection of Muscat of Alexandria (4), Appley Towers (4), Directeur Tisserand (2), and Black Hamburg (2) Grapes; and dishes of Jas. Grieve, Emperor Alexander (2), and Peasgood's Nonsuch Apples; Souv. du Congrès (2), Margaret Marillat and Triomphe de Vienne Pears; Exquisite (2), Thos. Rivers and Bellegarde Peaches; Pineapple and Humboldt Nectarines; and Emerald Gem, Superlative (2), and Universal Melons. Montbretias were used as floral decoration.

The EARL OF BALFOUR showed the best set of twelve dishes of dessert fruit with Directeur Tisserand and Muscat of Alexandria Grapes, Pineapple Nectarines, Gascoyne's Scarlet Apples, and Triomphe de Vienne and Souv. du Congrès Pears, these last being especially good; second, VISCOUNTSSE COWDRAY; third, H. S. GLADSTONE, Esq. (gr. Mr. D. Campbell), Lapenoch, Thornhill. The Veitch Memorial Medal was added to the first prize in this class.

Col. J. P. GRANT (gr. Mr. J. Macdonald),

Biel, Prestonkirk, showed the best collection of six dishes of Pears; second, G. CRAIG SELLAR, Esq. (gr. Mr. A. Taylor), Morven.

APPLES.

These fruits were very well shown and in many instances the size and colour of the specimens were first-rate.

The best collection of twelve dishes of Apples (orchard house grown), came from the EARL OF BALFOUR's garden, and consisted of fine specimens of Emperor Alexander (2), Peasgood's Nonsuch, Rival, Gascoyne's Scarlet, Cellini, Charles Ross, James Grieve, Cox's Orange Pippin, The Houblon, Ribston Pippin, and King of the Pippins; second, VISCOUNTS COWDRAY; third, Brig.-Gen. J. HOWIESON CRAWFURD.

The Malcolm Dunn Memorial Medal and first prize for a collection of Apples, twelve varieties, were won by VISCOUNTS COWDRAY with fine highly-coloured fruits of Emperor Alexander Gascoyne's Scarlet, Queen Mary, James Grieve, Rosebery, Lady Sudeley, Cellini, Ribston Pippin, Charles Ross, Ellison's Orange, Worcester Pearmain and Beauty of Bath; Col. GRETTON, M.P. (gr. Mr. A. Graham), Melton Mowbray, second, and Brig.-Gen. J. HOWIESON CRAWFURD, third.

The best dozen dishes of Apples grown in Scotland were shown by VISCOUNTS COWDRAY, and the set consisted of goodly-sized specimens of The Queen, James Grieve, Charles Ross, Lane's Prince Albert, Lady Sudeley, Stirling Castle, Baumann's Red Reinette, Ellison's Orange, Allington Pippin, Ribston Pippin, Rosebery, and Cox's Orange Pippin; second, J. J. BELL IRVING, Esq., Murkenstoun House, Kelso; third, Mr. J. P. REED, Aberlady.

Mr. W. BAIRD, Coldstream, scored for three dishes of Apples, showing Bismarck, Rev. W. Wilks, and Loddington, in good form; Mr. J. NICHOL, Earlston, second.

FRUITS—SINGLE DISH CLASSES.

In the single dish section for Apples the classes were usually duplicated, one being open and the other confined to fruits grown in Scotland. In several instances the exhibits in one class were not kept a sufficient distance from those on either side. First prizes were awarded as follow:—Charles Ross, LORD COCHRANE OF CULTS; Newtown Wonder, Mr. J. P. REID; Gascoyne's Scarlet, Capt. S. H. COX; Irish Peach, Major GORDON; James Grieve, (open) Mr. J. B. IRVING, (Scotland) Mr. W. BAIRD; Ecklinville, Mr. G. ORMISTON; Peasgood's Nonsuch, Capt. COX; Golden Spire, Major GORDON; Worcester Pearmain, (open) Col. GRETTON, (Scotland) Major GORDON; Grenadier, Sir G. FERGUSON; Lane's Prince Albert, (open) Mr. J. B. IRVING, (Scotland) Mr. W. BAIRD; Lord Derby, (open) Mr. J. B. IRVING, (Scotland) Mr. J. MACKENZIE; Lord Grosvenor, Mr. A. ROBERTSON; Rev. W. Wilks, Mr. W. BAIRD; Lord Sutfield, (open) Mr. W. FERNIE, Cupar, (Scotland) Mr. R. KERR, Edinburgh; Stirling Castle, Mr. J. B. IRVING led in both classes; Warner's King, Major GORDON; Bramley's Seedling, (open) Col. GRETTON, (Scotland) Mr. J. P. REID.

LORD COCHRANE OF CULTS, led for Jargonelle Pears; Mr. C. STRAKER for Durondeau; Hon. A. ROBERTSON for Pitmaston Duchess; Mr. D. FRASER for William's Bon Chrétien; and Mr. G. LITTLE, for Beurre d'Amanlis.

The EARL OF BALFOUR was the most successful exhibitor of a collection of culinary Plums, red Plums, and purple Plums. VISCOUNTS COWDRAY showed the best Gages, and Mr. J. P. IRVING the finest yellow Plums. LADY M. GRAINER (gr. Mr. H. Boyd), Aytoun Castle, showed the best Peaches, and Mr. D. LONSDALE, Dumfries, the best Nectarines, while the EARL OF AIRLIE and the EARL OF STAIR divided the honours for Melons.

VEGETABLES.

Most of the vegetables were arranged in a tent adjoining the hall, and although there was a good display of useful produce, we believe we have seen better examples at previous exhibitions at Edinburgh.

Mr. A. ROBINSON had the best display of vegetables and hardy fruits, and included in his exhibit capital examples of Celery, Runner Beans, Onions, Peas, Parsnips, Cauliflowers, Apples, Pears, Plums, and Greengages. This was a somewhat unusual kind of display and one that attracted a good deal of attention.

Mr. J. GRAY, Uddingston, had the finest display of vegetables, and showed excellent produce. The same competitor scored for a collection of thirteen vegetables in a class confined to Scotland, with 64½ points out of a possible 78; Col. AIKMAN, second. Messrs. MURRAY AND SON, Park Hall, Polmont, had the best collection of Tomatos; second, Messrs. SCOTT BROS., Lesmahagow; these two exhibits made a very bright feature in the otherwise dull vegetable tent.

There were dozens of other classes for vegetables but limits of space forbids further reference to them.

NON-COMPETITIVE DISPLAYS.

Among so many splendid non-competitive displays set up by seed and nursery firms it is difficult to select a few for special mention, but we were greatly attracted by the magnificent exhibit of Messrs. DOBBIE AND CO., consisting of a grand lot of single, Collette and decorative Dahlias in fine colour and variety; garden Roses in abundance; superb Zinnias and good Sweet Peas. As a matter of fact, this firm had two large exhibits, and one of them was confined to dwarf Dahlias of the Coltness Gem type: these are of their own growing, and included Midget, yellow; Peter Pan, soft scarlet; Moonbeam, yellow, flushed with pink; Pink Coltness; and Dinkie, bright yellow, with dark stems. Messrs. SUTTON AND SONS contributed a handsome display of well-grown specimens of their special varieties of vegetables, and Messrs. J. CARTER AND CO., showed grand vegetables, admirably staged. Messrs. AUSTIN AND MCASLAN's exhibit of vegetables and Roses; Mr. M. HART's charming rock garden and streamlet; Messrs. ALLWOOD BROS.' Carnations and Dianthus; Mr. R. C. NOTCUTT's brilliant and finely arranged collection of Apples and other out-door fruits; Messrs. S. MCGREDY AND SONS' exhibit of lovely Roses; Messrs. STORRIE AND STORRIE fruit trees in pots; the interesting collection of rare hardy plants from Mr. T. SMITH of Newry; Messrs. DICKSON AND CO.'s Roses; and Messrs. G. BUNYARD AND CO.'s hardy fruits and collection of Grapes grown in an unheated house; and Mr. L. R. RUSSELL's Clematis, were all fine.

The outstanding non-competitive display was the large, central, flower garden designed and planted by Mr. J. JEFFERY. This handsome exhibit from the City of Edinburgh's Parks Department was very greatly admired. A low hedge surrounded the whole design, and within this, on all sides, were borders boldly planted with masses of Lilium speciosum, Fuchsia Gottingen, Stocks, Asters, Begonias and Ivy-leaved Pelargoniums. A wide stretch of lawn fronted the flower borders and then came a wide path running round the large, oval central lawn furnished with beds of graceful crimson Celosias, over white Chrysanthemums, and a central fountain basin, lit at night by electricity.

Another and totally different exhibit was the educational one for the EDINBURGH AND EAST OF SCOTLAND COLLEGE OF AGRICULTURE, consisting of hardy fruits suitable for Scottish gardens, and models of insect and other pests which the fruit grower has to combat.

Medals were awarded as follows by the Royal Caledonian Horticultural Society:—

Large Gold Medal:—To Messrs. AUSTIN AND MCASLAN, Glasgow, for vegetables and Roses; to Messrs. DOBBIE AND CO., Edinburgh, for Dahlias; to Messrs. SUTTON AND SONS, Reading, for vegetables; and the CITY OF EDINBURGH CORPORATION for a flower garden.

Gold Medal:—To Messrs. ALLWOOD BROS., Haywards Heath, for Carnations, etc.; to BACKHOUSE NURSERIES, LTD., York, for rock garden; to Messrs. G. BUNYARD AND CO.,

Maidstone, for hardy fruits; to Messrs. J. CARTER AND CO., Raynes Park, for vegetables and fruits; to Messrs. DICKSON AND CO., Edinburgh, for Roses; to Mr. M. HART, Glasgow, for rock garden; to Messrs. ISAAC HOUSE AND CO., Bristol, for Scabious; to Messrs. LAIRD AND DICKSON, Edinburgh, for rock garden; to Messrs. S. MCGREDY AND SON, Portadown, for Roses; to Mr. R. C. NOTCUTT, Ipswich, for hardy fruits; and to Messrs. STORRIE AND STORRIE, Glencarth, for fruit trees in pots.

Silver-Gilt Medal:—To Messrs. BLACKMORE AND LANGDON, Bath, for Begonias and Delphiniums; to CARSE OF GOWRIE FRUIT CO., for fruits and flowers; to Messrs. DANIELS BROS., Norwich, for Gladioli, fruits and vegetables; to Messrs. FAIRBAIRN AND SONS, Carlisle, for Phloxes and Dahlias; to Messrs. FORBES, Hawick, for Penstemons and other herbaceous plants; to Mr. DAVID KING, Edinburgh, for rock garden; to Mr. THOMAS ROBINSON, Nottingham, for Roses; to Messrs. L. R. RUSSELL, Richmond, for Clematis; to Mr. T. SMITH, Newry, for hardy plants; and to Messrs. THYNNE AND SONS, Dundee, for hardy flowers.

Silver Medal:—To Messrs. BAKERS, Codsall, for hardy flowers; to Messrs. D. AND W. CROLL, Dundee, for Roses; to Messrs. CUNNINGHAM AND FRASER, Edinburgh, for hardy flowers; to Mr. JOHN DOWNIE, Edinburgh, for hardy fruits; to Messrs. HEWITT, Birmingham, for hardy flowers; to Messrs. KEITH LUXFORD AND CO., Harlow, for Chrysanthemums; to Messrs. LAXTON BROS., Bedford, for hardy fruits; to Messrs. T. METHVEN AND SONS, Edinburgh, for fruits and miniature garden; to Messrs. RICH AND CO., Bath, for hardy flowers; to Messrs. TILLIE, WHITE AND CO., Edinburgh, for vegetables and flowers; to Messrs. JAMES VERT AND SONS, Saffron Walden, for Hollyhocks; and to Mr. W. WELLS, junr., Merstham, for hardy flowers.

R.H.S. DEPUTATION'S AWARDS.

Gold Medal and Congratulations of the Council—To CORPORATION OF EDINBURGH for a formal garden; and to Messrs. SUTTON AND SONS, Reading, for vegetables.

Gold Medal:—To Messrs. AUSTIN AND MCASLAN, Mitchell Street, Glasgow, for a group of flowers and vegetables; to Messrs. DOBBIE AND CO., Edinburgh, for Dahlias, Roses, etc.

Silver-Gilt Flora Medal:—To BACKHOUSE NURSERIES (YORK), LTD., York, for a rock garden; to Messrs. BAKERS, Codsall, for hardy flowers; to Messrs. DICKSON AND CO., Charlotte Square, Edinburgh, for Roses; to Messrs. JAS. FORBES, LTD., Buccleuch Nurseries, Hawick, for Penstemons and Herbaceous flowers; to Mr. MAXWELL M. HART, Buchanan Street, Glasgow, for a rock garden; to Messrs. LAIRD AND DICKSON, Pinkhill Nurseries, Murrayfield, Edinburgh, for rock garden and rock plants; to Messrs. S. MCGREDY AND SON, Portadown, for Roses; to Mr. THOMAS ROBINSON, Porchester Nurseries, Nottingham, for Roses; and to Messrs. THYNNE AND SON, Union Street, Dundee, for hardy flowers.

Silver-Gilt Knightian Medal:—To Messrs. JAMES CARTER AND CO., Raynes Park, for vegetables; to Messrs. TILLIE, WHITE AND CO., Melbourne Place, Edinburgh, for vegetables.

Silver-Gilt Hogg Medal:—To Mr. R. C. NOTCUTT, Woodbridge, Suffolk, for fruit; to Messrs. STORRIE AND STORRIE, Carse of Gowrie Nurseries, Glencarse, for fruit trees in pots; and to The EARL OF STRATHMORE, Glamis Castle, (gr. Mr. D. McInnes), for Grapes.

Silver Flora Medal:—To Messrs. BLACKMORE AND LANGDON, Bath, for Begonias; to Mr. JOHN DOWNIE, Shandwick Place, Edinburgh, for hardy flowers; to Messrs. E. FAIRBAIRN AND SONS, Carlisle, for Phloxes and Dahlias; to Messrs. ISAAC HOUSE AND SON, Bristol, for Scabious; to Messrs. LOWE AND GIBSON, Crawley, Sussex, for Gladioli; to Messrs. RICH AND CO., Bath, for herbaceous flowers; to Messrs. CUNNINGHAM, FRASER AND CO., LTD., Comely Bank Nurseries, Edinburgh, for hardy flowers; to Messrs. L. R. RUSSELL, LTD.,

Richmond, for Clematis; to Mr. T. SMITH, Daisy Hill Nursery, Newry, Co. Down., for hardy plants; to Mr. W. WELLS, junr., Mersham, Surrey, for herbaceous flowers; to Sir BASIL MONTGOMERY, Kinross House, Kinross (gr. Mr. R. Fraser), for herbaceous flowers; LORD COCHRANE OF CULTS (gr. Mr. James Smith), for Sweet Peas.

Silver Hogg Medal.—To CARSE OF GOWRIE NURSERY CO., Errol, Perthshire, for fruit; to Messrs. DANIELS BROS., LTD., Norwich, for fruit and vegetables; to THE EARL OF BALFOUR, Whittinghame, Prestonkirk (gr. Mr. G. F. Anderson), for a collection of Apples.

Silver Lindley Medal.—To CARSE OF GOWRIE NURSERY CO., Errol, for Old Scottish varieties of Apples and Pears; and to Messrs. E. MAIR AND SONS, Prestwick, Ayrshire, for finely-grown Gladioli.

Silver Knightian Medal.—To Mr. JOHN GRAY, of Uddingston, for a collection of vegetables.

Bronze Lindley Medal.—To Mr. R. WHITELAW, Station House, Laurencekirk, for well-grown Gladioli.

Bronze Knightian Medal.—To Mr. THOMAS JOHNSTONE, Ellensborough, for a collection of vegetables.

Veitch Memorial Medal in Silver and £5.—To VISCOUNTS COWDRAY, Dun Echt, Aberdeen, (gr. Mr. Wm. Smith), for a group of stove and greenhouse plants.

Veitch Memorial Medal in Bronze and £2 10s.—To THE EARL OF BALFOUR, Whittinghame, Prestonkirk, (gr. Mr. G. F. Anderson), for dessert fruit.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

A MEETING of the Committee was held at Southport Flower Show on Wednesday, Aug. 26.

Present; J. McCartney, Esq. (in the chair), Messrs. W. Beesley, A. Burns, J. Evans, A. G. Ellwood, G. Giles, J. Lupton, E. W. Thompson, and H. Arthur (Secretary), visitor Mr. G. Thrower.

It having been previously decided that the Society's awards should be given to any worthy Orchid exhibit throughout the show the following medals and certificates were granted.

Gold Medal.—To Messrs. J. AND A. McBEAN, Cooksbridge, Sussex, for a magnificent display composed of Odontoglossums in variety, Cattleyas and Laelio-Cattleyas, including L.C. Baltic, L.C. Celtic, L.C. Vega, fine examples of Vanda coerulea var. Delicata, and V. c. Blue Bird.

Large Silver-Gilt Medal.—To the Hon. G. E. VESTEY, the Warren, Birkdale (gr. Mr. Collins), for a group containing Cattleyas, Odontodas and Odontoglossums in variety, including a fine example of Odm. hastilabium; to Messrs. CHARLESWORTH AND CO., Haywards Heath, for Odontodia Columbia, O. Chanticleer, Odontonia Ceres, O. Merope, Miltonia Bleucana Pitt's var., M. B. Beau Brummel, Cattleya Dupreana, C. Hardyana alba, Laelio-Cattleyas in variety, and well-flowered plants of Dendrobium Phalaenopsis Schröderianum; to Mr. J. EVANS, Colwyn Bay, for a group of Odontodas in variety, including O. The Queen, O. amabile albens, and O. Pyramus, a nice variety of Vanda coerulea, and Dendrobium Phalaenopsis Schröderianum.

Silver Gilt Medal.—To Mrs. BRUCE AND Miss WRIGLEY, Bury (gr. Mr. A. Burns), for an interesting group composed of Cypripedium Maudiae magnificum (eighteen plants); Cattleya Rothschildianum, C. Frau Idor Brandt, C. William Matthews, and C. Ernest Read; with Cynoches ventricosum, and C. chlorochilum; to J. McCARTNEY, Esq., Bolton (gr. Mr. C. F. Potts), for a group composed of Cattleyas in variety, Odontodas and Cypripediums; to Messrs. SANDERS, St. Albans, for a group of Cattleya Hardyana var. Midas, C. Venus, C. Prince John, C. triumphans var. Brugensis, and Laelio-Cattleya Veronia superba; Sophro-Laelio-Cattleya albensis; Oncidium Papilio majus; Stanhopea insignis flavens; and Bulbophyllum barbigerrum.

AWARDS.

FIRST CLASS CERTIFICATES.

Laelio-Cattleya Profusion var. Celtic (Hardyana x Serbia), a magnificent flower of good even colour and with very broad, well-set petals. The large lip is deep maroon at the base and pleasingly frilled.

Laelio-Cattleya Profusion var. Baltic.—Similar to the foregoing but paler in colour. Vanda coerulea delicata: A flower of pale pink colour with a bright red lip, from Messrs. J. AND A. McBEAN.

Cattleya Carmencita aurea var. Golden Beauty.—A well-formed flower of good substance, with golden-yellow sepals and petals and deep crimson lip; from J. McCARTNEY, Esq.

Laelio-Cattleya Britannia var. Majestica.—A well-formed flower with white sepals and petals, and a maroon lip with a yellow throat; from H. T. PITT, Esq.

Cypripedium Godefroyae, Haddon House var.—The finest form yet seen in the north. The large, round, dorsal segment is beautifully spotted; from P. SMITH, Esq.

Odontodia Columbia (Odm. Alcantara x St. James).—The plant had a spike of fifty-two flowers and buds; from Messrs. CHARLESWORTH AND CO.

Odontoglossum The Queen.—A large flower with fimbriated segments, almost solid heliotrope in colour, brightly spotted and marbled. The large, flat lip is tipped with white; from Mr. J. EVANS.

AWARDS OF MERIT.

Laelio-Cattleya Nanon var. Perfection; from J. B. ADAMSON, Esq.

Odontoglossum Madeline var. Ruby Queen; from P. SMITH, Esq.

Odontodia Gladys; from the Hon. G. E. VESTEY.

Cattleya Hardyana var. Midas; from Messrs. SANDERS AND SONS.

Vanda coerulea var. Blue Bird; from Messrs. J. AND A. McBEAN.

AWARD OF APPRECIATION.

Laelio-Cattleya Vega; from Messrs. J. AND A. McBEAN.

CULTURAL CERTIFICATES.

Mr. B. COLLINS for Odontoglossum hastilabium.

Mr. C. F. POTTS for Cattleya Atalanta (also awarded a Silver Medal).

Messrs. KEELING AND SONS, for Cypripedium A-de-Lairesse.

MILL HILL HORTICULTURAL.

THE fifth annual flower, fruit and vegetable show of the Mill Hill Horticultural Society was held in Broadway Hall, on Saturday, August 29. In spite of the unfavourable season, there was an excellent display of produce. Vegetables, generally, were of a high standard of excellence, and many of the floral exhibits were of very considerable merit. The fruit classes were not so well filled as usual. There was a record attendance of visitors. The President of the Society is Councillor A. S. M. Bowers, and among the Vice-Presidents are Sir Phillip Cunliffe-Lister (President of the Board of Trade), Chas. Wright, J.P., and C. E. Gabain, Esq.

The honorary exhibits were especially noteworthy. J. ROSS COLLINS, Esq., Oak Lodge, Totteridge, put up a very fine group of flowers and foliage plants recalling the days gone by when such beautiful plants were a feature at all Mill Hill shows. There were also some fine Grapes from the same exhibitor. Another very fine display, kindly sent by C. E. GABAIN, Esq. (gr. Mr. James A. Paice), consisted of a group of Palms, cut flowers, and vegetables. This exhibit was the feature of the show. Mr. GOLBY put up a fine group of flowers and foliage and Messrs. HILLINGS, a splendid collection of Roses and other florists' flowers.

In an open class for table decorations, the first prize was awarded for a decoration of Helenium Riverston Gem, arranged by Mr. JAMES A. PAICE, Sunnyfields Gardens.

Obituary.

Erich Behnick.—Many English readers will be sorry to hear of the death of Erich Behnick, the Director of the Heidelberg Castle Gardens and technical Director of the Botanic Garden in that town. He was born in Stettin in 1873, and spent two years after leaving school with his father, a gardener, who believed in hard work toiling himself from dawn till dark. At sixteen the lad came to England as an apprentice to Mr. Jannoeh, of Dersingham, where he stayed for a year, and then went to the Cambridge Botanic Garden where he lived with the Curator and gave him lessons in German in his spare time. Every moment he could snatch from work was spent in noting down the names of the plants, so that when he left he was able to boast that he had the whole botanic garden in his pocket. In 1893 he went to Kew, and did so well there that in the final examination he came third out of thirty-six. At the end of his year at Kew, the Inspector of the Berlin Botanic Gardens visited Kew and recommended Behnick for the Orchid Department in Berlin. He loved Orchids, and worked feverishly to acquire all the knowledge he could in his new post, writing later a work on the subject which was ready for the press at the time of his death. He remained at Berlin until 1910, when he went to Heidelberg and prepared plans for a new Botanic Garden, which involved much hard work. Just as the most difficult part of the work was completed, the war broke out, and labour became very scarce, which again involved overwork to the already overworked Director; his wife died soon after the end of the year, and this, added to the strain previously suffered, so enfeebled his constitution that a cold, caught on a warm day in August, turned to congestion of the lungs, and he died on the 8th of that month, after only a week's illness. He will be remembered with affection and gratitude by the many students he trained, though he was quiet and very reserved; and those who came in contact with him will not readily forget him.

P. R. Scott.—By the death of Mr. P. R. Scott Messrs. Sanders of St. Albans have lost the services of an old and valued employee, who had been with them since 1895. Previously he had been with Messrs. Cowan of Liverpool, at their Gateacre Nurseries, then with Messrs. G. Bunyard and Co., of Maidstone, from whom he came to Messrs. Sanders, taking the position of despatch clerk, and eventually becoming chief cashier. As with many other men in responsible positions the late war imposed a severe strain upon him, added to which was the loss of his eldest son, who died in Mesopotamia. Mr. P. R. Scott had a sudden heart attack, and after a few days he passed away on September 5, and was interred at St. Alban's Cemetery on the 8th. His loss is much regretted by Messrs. Sanders and by a wide circle of friends.

THE WEATHER IN SCOTLAND.

THE favourable weather conditions of the previous months were continued during August. With a total of 153.7 hours, a daily average of almost 5 hours and a percentage of 34, sunshine was slightly above the normal. The brightest day was the 16th, with 134 hours, and only on one day, viz., the 21st, was a blank card returned. August is frequently a wet month, but this year it has been remarkably dry. Although rain fell on 13 days, the total amount was only 43.18 millimetres = 1.7 inch, less than half the normal August rainfall. The wettest day was the 8th, which yielded .40 of an inch. The mean maximum temperature was 66.7° and the mean minimum about 2° above the average. The highest maximum of 74° occurred on the 15th and 31st, the lowest maximum of 6° on the 21st, and the highest and lowest minima of 57° and 44° were registered on the 13th and 28th respectively. On the grass the lowest reading of 37° also occurred on the 28th. At 1 foot deep the soil temperature fell 3° during the month, being 61° at the beginning and 58° at the close. Barometric pressure was very steady throughout, with a mean of 1012.5 millibars (29.9 inches)—the extremes were 1027.2 millibars on the 15th, and 1003.2 millibars on the 9th. Winds, which were mostly south-westerly, were invariably moderate, only on the 7th and the 29th did they approach gale force. John Davidson, Director of Studies, the Training College Gardens, Magfield, Dundee.

MARKETS.

COVENT GARDEN, Tuesday, September 15th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum	...	Hydrangea	...
cuneatum	...	white, 48's per	...
per doz.	10 0-13 0	doz.	18 0-30 0
—elegans	...	—pink, 48's per	...
...	10 0-12 0	doz.	18 0-24 0
Aralia Sieboldii	9 0-10 0	—blue, 48's per	...
Araucarias, per	...	doz.	30 0-48 0
doz.	30 0-42 0	Nephrolepis	...
Asparagus plu-	...	variety	12 0-18 0
mosus	12 0-18 0	—32's	24 0-36 0
—Sprengeri	12 0-18 0	Palms, Kentia	30 0-48 0
Aspidistra, green	36 0-60 0	—60's	15 0-18 0
Asplenium, per	...	Pteris, in variety	10 0-15 0
doz.	12 0-18 0	—large 60's	5 0-6 0
—32's	24 0-30 0	—small	4 0-5 0
—nidus	12 0-15 0	—72's per tray	2 6-3 0
Cacti, per tray,	...	of 15's	...
—12's, 15's	5 0-7 0	Viscaria, 48's	...
Crotons, per doz.	30 0-45 0	per doz.	15 0-18 0
Cyrtolium	10 0-25 0		

Cut Flowers, etc.; Average Wholesale Prices

	s. d. s. d.		s. d. s. d.
Adiantum deco-	...	Honesty, per doz.	...
rum, doz. bun.	9 0-10 0	bun.	18 0-30 0
—cuneatum, per	...	Lapagerias, per	...
doz. bun.	6 0-8 0	doz. blooms	3 6-4 0
Asparagus plu-	...	Lilium longiflorum	...
mosus, per bun.	2 0-3 0	long, per doz.	5 0-5 6
long trails, 6's	1 6-2 6	—speciosum	...
med. sprays	0 9-1 3	album, long, per	...
—Sprengeri, per bun.	...	doz.	3 6-4 0
long sprays	1 6-2 0	—short, per doz.	4 0-5 0
med.	1 0-1 6	—speciosum	...
—short	0 4-1 0	rubrum, long,	...
Asters, white, per	...	per doz. blooms	2 0-2 6
doz. bun.	5 0-6 0	—short	1 6-2 0
—coloured, per	...	Lily-of-the-Valley,	...
doz. bun.	4 0-6 0	per doz. bun.	24 0-30 0
Carnations, per	...	Montbretia, per	...
doz. blooms	2 6-3 6	doz. bun.	4 0-6 0
Chrysanthemum	...	Orchids, per doz.	...
maximum, doz.	2 6-3 0	—Cattleyas	36 0-48 0
Chrysanthemums	...	—Cypripediums	5 0-7 0
—white, per doz.	...	Physalis, per doz.	...
blooms	4 0-6 0	bun.	15 0-24 0
—bronze, per doz.	...	Roses, per doz.	...
blooms	2 0-4 0	blooms, Rich-	...
—bronze, per doz.	...	mond	2 6-3 6
bun.	12 0-18 0	—Liberty	2 6-3 6
—yellow, per doz.	...	—Madame Butter-	...
blooms	4 0-6 0	fly	2 0-3 6
—yellow, per doz.	...	—Mme. Abel	...
bun.	12 0-15 0	Chenay	2 0-2 6
Coreopsis, per doz.	...	Melody	2 0-3 0
bun.	1 3-1 6	—Molly Sharman	...
Cornflowers per	...	Crawford	2 6-3 6
doz. bun.	2 0-2 6	—Ophelia	2 6-3 6
Croton leaves	...	—Sunburst	2 0-3 0
per doz.	0 9-2 6	Scabiosa caucas-	...
Fern, French, per	...	ica, per doz.	...
doz. bun.	—	bun.	4 0-5 0
Gardenias, per	...	Smilax, per doz.	...
box, 12's, 18's	5 0-6 0	trails	3 0-3 6
Gladoli, white,	...	Stative, mauve	5 0-6 0
per doz. bun.	12 0-15 0	—yellow, per doz.	...
—primulinus, per	...	bun.	5 0-6 0
doz. spikes	1 6-2 6	—white, per doz.	...
—Halley, per doz.	...	bun.	5 0-6 0
spikes	1 0-1 6	—pink, per doz.	...
—Prince of Wales	...	bun.	5 0-6 0
per doz. spikes	1 6-2 6	—latifolia, per	...
—scarlet, per doz.	...	doz. bun.	10 0-12 0
spikes	2 0-3 0	—incana, per doz.	...
—cream, per doz.	...	bun.	9 0-12 0
spikes	2 0-3 0	Stephanotis, per	...
—Giant White,	...	72 pips	3 0-3 6
per doz. spikes	2 0-3 0	Stock, English	...
Gypsophila panic-	...	white	6 0-8 0
ulata, double,	...	Sultan, white, per	...
per doz. bun.	18 0-24 0	doz. bun.	4 0-6 0
Heather, white,	...	—mauve, per doz.	...
per doz. bun.	10 0-12 0	bun.	4 0-6 0
—pink, per doz.	...	—yellow, per doz.	...
bun.	8 0-9 0	bun.	5 0-6 0

REMARKS.—Chrysanthemums are receiving more attention from buyers, and prices are generally easier, except for 'Spray White.' Carnations are a trifle easier in prices, but their value is gradually on the up grade; the quality of the blooms is good throughout. Lilium longiflorum advanced considerably in price during last week, but the supplies were larger to-day and the prices much lower. The general supplies of most subjects appear to be sufficient for present requirements. Physalis is arriving in excellent condition, and Michaelmas Daisies are now on sale. The colder weather is more suited to the sale of Violets.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—	...	Marrows, tally	...
—Scarlet Runner,	...	Onions—	...
bushel	3 6-4 0	—Dutch	8 0-8 6
Beets, new, per	...	—English, per cwt.	8 0-9 0
doz. bun.	2 0-3 0	—Valencia	9 0-10 0
Cabbage, per tally	7 0-12 6	Parsnips, per cwt.	4 0-6 0
Celery, per doz.	...	Potatoes—	...
fans	16 0-24 0	—King Edward.	...
Cauliflowers, per	...	per cwt.	6 0-7 6
doz.	3 0-6 0	—others	3 6-6 0
Carrots, new, per	...	Sprouts, per bag	5 0-5 0
bag	5 0-7 0	Tomatoes, English,	...
Cucumbers, per doz.	3 0-4 0	per strike—	...
—Flats, 36's, 42's	8 0-10 0	—pink	4 0-6 0
Dutch Onions	8 0-9 0	—pink & white	4 0-6 0
Horseradish, per	...	—blue	2 6-3 6
bundle	2 0-3 6	—Guernsey	2 6-4 0
Lettuce Cos, doz.	1 0-3 0	—Jersey	2 6-4 0
—cabbage	1 6-2 6	—Dutch	2 6-3 6
Mushrooms, cups	3 0-5 0	Turnips, per cwt.	4 0-6 0
—Broilers	2 6-3 0		

REMARKS.—Business conditions have shown little or no improvement during the past week. Very heavy arrivals of Worcester Pearmain Apples, coupled with a poor demand brought prices to a comparatively low level. At the time of writing there is a slightly better tendency in this section, but only for really bright specimens, the bulk of arrivals, unfortunately, not answering to that description. Large cookers are in steady demand with a slightly improved inquiry. Plums are selling well, prices all round being very satisfactory to the producers and both Monarch and Bush will continue a good trade until they are finished for the season. Choice fruits, such as Grapes, Peaches, Nectarines, and Melons have met a very moderate inquiry, and Grapes in particular are being affected by Dutch supplies. Tomatoes sell fairly well, but supplies are on the short side, although outdoor Jersey Tomatoes are coming more freely. Cucumbers are in poor demand and show some reduction in quotations. Cob Nuts are scarce and in poor demand. Pears are slightly more plentiful and move freely. Green vegetables are a fairly good trade, but the Potato trade is moderate. Mushrooms are scarce and dear, even "field" produce selling at a high level.

GLASGOW.

The upward movement in the cut flower market was checked last week when trading was rather slow again. Apart from Chrysanthemums and Gladioli, which bulked largely in the daily supplies, there was little variety to tempt the retail florist. A small feature was the demand for Lilium longiflorum accompanied by a sharp advance to 6/- per bunch; L. speciosum rubrum remained steady at 1/6 to 2/6. Good spikes of Gladioli were worth 3d. each. White Giant, Halcyon and red commanding 10d. to 1/2 per bunch. Immature 8d. and 9d., ordinary 1/- to 2/- per doz. and small mixed 6d. to 10d. Carnations were easier at 2/- to 3/- per doz., while Ophelia, Madame Butterfly and Mme. Abel Chatenay roses kept steady at 2/6 to 3/6 and Richmond and Mrs. Henry Stevens at 1/6 to 2/6. Chrysanthemums are plentiful and meet with a ready sale. Betty Spark, No. 2 bronze and an unnamed pink made 1/- to 1/3 for 6's, White Sanctity and yellow 10d. to 1/2. Loan's pink and crimson 5d. to 8d. and Wells' white 5d. to 7d. Sweet Peas are depreciating rapidly and prices ranged from 1d. to 4d. per bunch. Asters sold at similar prices, and Statice brought from 3d. to 5d.; Asparagus 8d. to 1/-; Smilax 1/6 to 1/9 (six trails), and A. Sprengeri 8d. to 10d. Gypsophila was poor in quality and even at the low price of 2/- per box it was difficult to dispose of; Montbretia averaged 3/- per doz. bunches.

A good turnover was reported in the fruit market. Plums were not so plentiful, but the supplies of Damsons continued heavy. Best Victorias averaged 10d. and 11d. per lb., seconds 6d. and 7d. Monarchs, 14/- per sieve; Bush Plums, 8/- to 9/-; Swetchn 7/- to 8/-; Gollath and Czar 5d. to 6d. per lb.; Prune Damsons, 14/- to 15/- per sieve; Kent ditto, 12/-; Grapes were cheaper. English Black Hamburgs, 13/- to 16/-; Scotch, 1/- to 1/4; and Dutch, 10d. to 1/- per lb.; Alicante English, 1/6 to 1/9; Scotch, 1/3 to 1/6; Dutch and Guernsey, 10d. to 1/-; English Muscats, 3/- to 4/-. Imports of Pears are increasing, but prices remain firm as follows: Californian Beurre Hardy, 17/- per half case; Duchess, 15/6 to 16/6; Eureka, 18/- to 19/-; French Beurre Hardy, 14/- to 16/-; Channel Islands Duchess, 9d. to 10d. per lb.; Clapp's Favourite, 8d. to 10d. and Beurre Hardy, 10d. to 1/-; English cooking Apples varied in quality and prices: Lord Grosvenor, ranging from 11/- to 14/- per cwt.; Grenadier, 12/- to 16/-; Lord Derby, 14/- to 20/- and Warner's King, 16/- to 20/-; Californian Apples are also coming in more freely and average prices worked out as follows: York Imperials, 24/- to 36/- per barrel; Ben Davis, 30/- to 32/-; Maidens' Blush, 29/- to 34/-; Jonathan, 38/- to 42/-; Wealthy, 30/- to 36/-; Bonham, 32/-; Gravenstein, 18/- to 22/- per case; and Wealthy 14/6 to 18/-. Peaches made 6/- per doz., and Grape Fruit was dearer at 40/- to 42/- per case. South African Navel Oranges, 150, 176, 200 and 216 counts sold at 25/- to 27/-; 252, 288, 96 and 110 at 20/- to 22/-; Seedless, 150, 176, 200 counts, 26/- to 27/-; 216 and 252, 23/- to 24/-; 288, 89, 96 and 110, 18/- to 20/-; Bronze Melons, 24's, 12/- to 16/-; 36's, 12/- to 14/-.

Tomatoes are becoming scarcer and prices, which ranged from 8d. to 10d. per lb. earlier in the week, rose to 11d. and 1/- on Friday; Jersey fruit made 5d. and Dutch 4d. Cucumbers ranged from 2/6 to 5/- per doz.; Cauliflower, 4/6 to 8/-; Marrow, 4/- to 6/- and Lettuce, 1/6 to 2/6.

GARDENING APPOINTMENT.

Mr. A. H. Nibbs, for the past five years Gardener to Brig.-Gen. F. B. MATTHEWS, C.B., D.S.O., The Old Raven House, Hook, near Basingstoke, and previously with the late JOSEPH BELL, Esq., Nunham, as Gardener to Miss FREER, Northminster, Ashford, Middlesex.

ANSWERS TO CORRESPONDENTS.

DIANELLA INTERMEDIA. F. I. It is an unfortunate habit of this interesting New Zealand plant for the attractive blue fruits to fall soon after they are ripe. This summer the outside temperature was very high at times during June and early July, and it was difficult to maintain a reasonable temperature in a so-called cool greenhouse; for this reason the normal decorative period of quite a number of greenhouse plants was curtailed. Try again next year, selecting for the summer period the coolest house available.

FANCY DUCKS AND OTHER WATER-FOWL. J. D. C., Jersey. Mr. Chapman, 17, Tottenham Court Road, London, W.1. deals very extensively in this class of birds.

GOLDEN VALERIAN. Adele Lerche. The Golden Valerian is Valeriana Phu aurea, the leaves of which assume a bright golden yellow colour in spring and early summer. We do not see that seeds are offered by anyone; and probably the most or all of them would give rise to seedlings with green foliage. Plants are obtainable from Messrs. J. Cheal and Sons, Crawley, Sussex; from Messrs. R. Tucker and Sons, Oxford; from Mr. Amos Perry, Hardy Plant Farm, Enfield, Middlesex; and from Messrs. M. Prichard and Sons, Christchurch. All these are in England. Messrs. John Forbes, Ltd., Hawick, Scotland, also offer the plant.

HYBRIDISING AND RAISING DAHLIAS. E. S. Only a small proportion of double flowers can be raised from Dahlia seeds however carefully the latter have been saved. If only double varieties were grown in the same garden the proportion of doubles would be higher than if singles and Collerettes were growing near, because these single types produce a lot of pollen which would be carried by insects to the doubles and cross fertilisation would be effected. This may be prevented, to some extent, by placing a thin muslin bag over the double flowers intended for seeding. Dahlias are self-fertilising. With a view to producing certain colours this can be helped by taking pollen with a camel hair brush from one to another, then covering the blooms with thin muslin until the seed is ready for harvesting. But with all this care colours cannot be fixed. The result is bound to be a mixture, and the proportion of doubles also small. If you are fond of any particular type of Dahlia and wish to raise seedlings it is best to grow only the one type. Raising Dahlias from seed is interesting, but often disappointing.

NAMES OF PLANTS. G. J. The Linaria is L. repens alba or the albino of L. repens, much more common in gardens than in the wild state.

TOMATO LEAVES DISEASED. A. T. R. Your Tomato leaves are attacked by the fungus Botrytis cinerea. The spores of this fungus are present in the air of most glasshouses, but infection depends upon the conditions under which the plants are growing. To control this disease the foliage of the plants should be judiciously trimmed to allow the air to circulate freely around each plant. This practice, coupled with the efficient ventilation of the glasshouse, will have the effect of drying out the foliage and so prevent further infection. All infected leaves should be removed, otherwise the fungus will grow back along the leaf stalk in the main stem and cause the death of those parts of the plant above the point of attack. A two per cent. solution of calcium bi-sulphate is specific for Botrytis, and will destroy any parts of the fungus with which it is brought into contact. In most cases, however, it is not necessary to use a spray, as ventilation and dry atmosphere will control the fungus.

Communications Received.—E. W. S.—A. H.—R. C.—R. J. W.—J. E. H.—J. M. W.—H. E.—S. H.—R. U.—J. C.—F. J.—W. H. J.—J. B. S.—R. O. C.—H. C.—G. H.—C. J. J.—Novice.—J. A.—G. W. B.—J. F.—A. P.—W. R. B.—S. N., Lithuania.

THE Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 54.0.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 23, 10 a.m. Bar. 20.5. Temp. 55°. Weather, dull.

THE Rhododendron exercises such a compelling attraction that garden lovers have known to seek and find pretexts for removing house and home from a situation perfect in all other respects, save in its being veto in Rhododendron-growing, to some peaty district in which the successful cultivation of these plants is assured. Others, less adventurous, are accustomed to import into their gardens truck loads of peat wherewith to ameliorate the soil. Only few persist in trying to grow Rhododendrons in ordinary lime-containing soil and their obstinate optimism is reproved by a point blank refusal of the plants to flourish. Yet experiments recently carried out by Mr. F. V. Coville of the Bureau of Plant Industry should, if confirmed, revive hope in the breasts of those who have long since admitted defeat. So far as Rhododendron cultivation is concerned, Mr. Coville first satisfied himself that not all peats are propitious for Rhododendrons. He distinguishes two kinds of peat. One, in which Rhododendrons, Azaleas and other "lime shy" plants flourish, has a well marked acid

reaction; the other, which is alkaline, is inimical to these plants. In it Rhododendrons die no less readily than in well limed garden soils. Mr. Coville did not, however, leave matters here, but proceeded to carry his investigations a step further. For this purpose he made use of a non-acid, rich garden soil in which Rhododendrons could not be induced to live. By treating it with aluminium sulphate and thereby rendering it acid, Mr. Coville succeeded in making it grow Rhododendrons as luxuriantly as would any acid, peaty soil. Needless to say the experiment must be continued some time yet before we can be certain that it is safe to plant Rhododendrons in soil thus artificially treated. It would, moreover, be interesting to know whether, in the case of a garden soil very rich in lime, the effect of aluminium sulphate would be as decisive and satisfactory as it was in the experiments made by Mr. Coville. The pamphlet* which contains only a brief summary of Mr. Coville's experiments does not state the lime-content of the garden soil which he used. Now, however, that the observations on the effect of aluminium sulphate have been recorded, it will be easy for anyone to experiment for himself in this simple method of growing Rhododendrons in soil which has hitherto refused to tolerate them. Unfortunately, the pamphlet to which reference has been made does not state what species of Rhododendron were used in the experiments. That they were indeed "lime shy" is quite clear from the fact that they failed to grow in the untreated garden soil. But species of Rhododendron no doubt differ considerably in their tolerance of lime and it may prove—though we hope not—that only some varieties may yield to the acidifying virtues of aluminium sulphate. The behaviour of plants to the intensity of acidity or alkalinity of soils is at present engaging much attention. Some plants are able to live and flourish in soils having a wide range. Others, and these are mostly plants of agricultural and horticultural importance, thrive best when the soil is on the non-acid side; and herein lies apparently the value of frequent dressings of lime to such soils. Others again, the so-called lime-shy plants, flourish only when the soil is on the acid side—a state which may be brought about by aluminium sulphate as well as by other chemical agents. It would therefore be worth the while of those interested in horticultural research to ascertain the natural range of tolerance of species of Rhododendron and the dosage of acidifying dressing required to bring soil to and keep it within that range.

John Evelyn's House.—The autumn session of rambles of the Selborne Society will, by special permission, be opened by a visit to Wotton House, near Dorking, the home of John Evelyn, whose relatives have beautified the old mansion without destroying any part associated with the diarist. In the library are preserved Evelyn's original manuscripts.

Identification of Fruits at Westminster.—At this season of the year a great deal of fruit is sent to the Royal Horticultural Society's Fruit and Vegetable Committee for identification. The task of the Committee is rendered extremely difficult and identification is often impossible owing to the imperfect and poor samples of fruit sent. Only when three or

more fully mature specimens typical of the particular variety are sent can the Committee attempt identification. When sending fruits for naming, Fellows should observe these rules:—(1) To send at least three perfect specimens of each variety; fruit representative of the crop, each fully matured and well-formed. Avoid sending bruised, diseased, abnormally formed or immature fruit. (2) Include with each variety a fair sample of a shoot and foliage. (3) Number each variety, preferably in Roman figures, by marking the skin with a hard pencil and keep a record of the tree from which it is gathered. Labels are often lost or displaced in packing. (4) Wrap each fruit in paper and pack it carefully and securely in wood wool or similar material. Flimsy card-board boxes are usually crushed in the post, while scented soap boxes taint the fruit and obscure the characteristic flavour. (5) Give all information possible respecting the age of the trees, whether grown indoors or out, as cordons, standards, etc. The Fruit Committee meets at each fortnightly meeting of the Society, and fruit for identification should reach the office not later than the day before the meeting. Readers who send fruits to this office for naming should also be careful to follow these instructions.

Bequest to the Royal Horticultural Society.—The late Miss Evelyn Frances Spencer Wigram, of St. Just, Northaw, Potters Bar, who died on June 8 last, bequeathed a sum of £100 to the Royal Horticultural Society.

Dresden Horticultural Exhibition, 1926.—The Jubilee Exhibition which is to be held in Dresden in 1926, and which was referred to in our issue of the 30th May (p. 365) is, in part, well on the way to completion so far as the permanent features are concerned. Much planting and other preparation to the gardens was done in the spring of this year, and hundreds of tons of turf, sand, lime, etc., have been carted to the exhibition grounds. At the beginning of October 300,000 Roses will be planted; and the open-air theatre, beautifully situated among ancient Oaks, is practically finished. The arrangements for scientific exhibits are rapidly progressing, and this section is expected to be of especial interest. On account of the interest being taken in the exhibition by all German gardeners, the biggest Society—the Reichsverband des Gartenbaues—has decided to hold its annual festival and congress in Dresden next year.

Botanical Magazine. Vol. CLI., Part 1, of the *Botanical Magazine* contains illustrations and descriptions of the following twelve plants: *Rosa mirifica*, t. 9070, is the plant described by Prof. Cockerell in *Gard. Chron.*, January 24, 1914, as *Rosa stellata mirifica*. In general habit this species is described as a pimpinellifolia-Rose with a somewhat peculiar though hardly attractive foliage. The flowers, however, are of large size and a delightful shade of deep rose, passing as the bloom ages to a delicate pale pink. The species is said to be quite hardy at Kew and flowers freely from the end of June to the middle of July. *Dendrobium Victoria-Reginae*, t. 9071, is a well known Orchid in cultivation and was described by Loher in *Gard. Chron.* so long ago as June, 1897. It is known as the blue *Dendrobium* and has been exhibited on frequent occasions at recent R.H.S. meetings. *Androsace spinulifera*, t. 9072, was described and illustrated in *Gard. Chron.*, January 8, 1910, p. 25, Fig. 22; the flower stalk is tall for an *Androsace* and bears a head of deep purple to rose coloured flowers. *Rhododendron trichocladum*, t. 9073, is one of the newer Chinese species with small, sulphur-yellow or greenish-yellow flowers; it is not so showy as most members of the genus and not likely to be common in cultivation. *Staphylea holocarpa*, t. 9076, promises, according to Dr. Stapf, to be one of the best of Mr. Wilson's introductions, owing to the extreme grace and delicacy of the colouring of its panicles, and to its free-flowering; the plant is said to be perfectly hardy; it forms a shrub or small tree and bears pendulous panicles of rose-coloured flowers which fade with age to white. *Roscoea Humeana* t.

* "The Agricultural Uses of Acid Plants." By Frederick V. Coville, U.S. Bureau of Plant Industry. Reprinted from the *Journal of the American Peat Society*, XVIII, June, 1925.

9075, is one of the finest of the hardy species of *Roscoea*; it makes a good subject for the rock garden and is also very attractive in the alpine house; the hooded flowers are purple and produced on a two to eight flowered spike arising from the leaf sheaths. *Berberis repicata*, t. 9076, is valuable on account of the glorious tints which the foliage assumes in autumn, when the plant is also bearing its dark purple or blackish berries; the leaves are produced in fascicles of three to five or more and are linear-oblong to almost linear in shape. *Omphalodes Lojkae*, t. 9077, is a most glorious blue-flowering plant, growing from ten to twenty cm. high and covered with tightly adpressed, stiff hairs; the inflorescence is a lax, scorpioid cyme irregularly interspersed with a few small leaves and bearing a number of beautiful sky-blue flowers; this plant was described and illustrated in *Gard. Chron.*, July 7, 1913, as *Omphalodes cornifolia*, under which name it received the R.H.S. Award of Merit on March 18, 1913. *Tulipa australis* var. *arvorum*, t. 9078, has pretty, golden-yellow flowers stained with purple-red on the outside, particularly along the margins and towards the tips, was found by the Marquis of Headfort in a cornfield on the road from Batna to Biskra in the spring of 1923. *Salix Bockii*, 9079, is remarkable on account of the catkins being produced on the growing shoots of the current season. The species was discovered by Mr. Wilson in Western Szechuan; it forms an erect shrub from less than 1-3 mm. high. *Diervillea venusta*, 9080 has been regarded as a variety of *D. florida*, the plant cultivated in gardens as *Weigelia rosea*; it is a very ornamental Korean shrub, extremely floriferous and flowers generally earlier than its congeners; the trumpet-shaped corolla is a rich purple colour. *Aster staticifolius*, 9081, was described and illustrated in *Gard. Chron.* September 2, 1916, p. 116, Fig. 46, the illustration being reproduced from a photograph of a plant taken in its habitat by Mr. George Forrest; the flower heads are solitary, the ray flowers being a purplish-blue shade. The plant lends itself readily to cultivation and is easily propagated either by division or from seeds.

New Sugar Beet Factories.—The Anglo-Scottish Beet Sugar Corporation which has already expended a sum of £1,100,000 on Sugar Beet factories in this country, is instituting a second Anglo-Scottish Sugar Beet Corporation which will put in hand the erection of three new factories to be ready for the campaign beginning in October, 1926. A large factory will be erected near York, another on the outer fringe of the East-Anglian area at Felstead in Essex, whilst the third new factory will probably be erected in the county of Fife. In negotiations with the Trade Facilities Act Committee, the Corporation has agreed that 99 per cent. of the machinery and plant shall be made in Great Britain instead of 75 per cent., as required by the Subsidy Act. This will incur an expenditure of approximately £1,000,000 and will give employment to about 3,750 men for a period of three months, whilst permanent employment will be given to 2,000 additional men on agricultural work and 1,400 men for approximately four months in each year in the factories.

Legacy to a Gardener.—The late Lt. Col. Henry James Bowman of the Manor House, Aylsham, Norfolk, who died on June 22nd last, left a legacy of £150 to his gardener, Mr. William Wones.

Three Important Chrysanthemum Exhibitions.—That three important exhibitions of Chrysanthemums in three different countries should clash with each other in the matter of dates is most unfortunate. The National Chrysanthemum Society's Show will take place at Vincent Square on November 5 and 6. The Société Royale d'Horticulture et d'Agriculture d'Anvers has fixed November 7, 8 and 9 for the dates of its show in the Palais des Fêtes

de la Ville, Antwerp; while the French Chrysanthemum Society's exhibition and congress at Lyons, will be held from November 5 to 8. We know that several British Chrysanthemum lovers would like to visit one, if not both of the continental shows, as well as the one at Westminster, but it would be impossible for them to proceed from the latter to Lyons in time for the opening proceedings, although they could reach Antwerp in time. Moreover, the clashing of dates practically precludes British growers from making a display at these continental functions.

Mr. D. S. Melville.—Like many another Scottish gardener, Mr. D. S. Melville commenced his horticultural career under his father, who for nearly forty years was gardener and forester at Glenlee Park, Kirkcudbrightshire. Here he obtained a good deal of experience in connection with forestry as well as in gardening. On leaving home he went to Melville Castle, near Dalkeith, where he remained for two years before passing on



MR. D. S. MELVILLE.

to the gardens at Scone Palace, Perth, under the late Mr. Alexander McKinnon, where during his period of service, he assisted in the transplanting of many very large trees with a then novel transplanting machine. His next appointment was at Ardgowan, Greenock, where he became foreman under the late Mr. Thomas Lunt and added greatly to his knowledge of the cultivation of indoor fruits and plants. In the autumn of 1893 he was appointed gardener to the late Lord Malcolm at Pottaloch, Kilmartin, Argyllshire, and he has remained in charge of these gardens ever since. On the death of Lord Malcolm, Col. E. D. Malcolm, C.B., succeeded to the estate and the present owner is Sir Ian Malcolm. During Mr. Melville's control of the gardens very many extensive alterations and improvements have been carried out and the collection of trees and shrubs includes many fine Indian Rhododendrons, notably *R. Falconeri*, *R. Hodgsonii*, *R. campylocarpum*, *R. Thomsonii*, and *R. barbatum*, which all thrive well and flower profusely each year at Pottaloch. The collection also includes a very fine specimen of *Eucryphia pinnatifolia*, fully thirty feet high which, at the end of August, was a mass of beautiful flowers from the ground level upwards.

Pentactina rupicola.—This plant, the only representative of a genus of the Rose Family closely related to *Spiraea*, flowered during June in the rockery connected with the propagating department of the Arnold Ar-

boretum. Discovered in 1916 by a Japanese botanist among the Diamond Mountains in northern Korea, Wilson collected seeds which he sent to the Arboretum the following year. In writing of the region where this plant grows Wilson states:—"In all the East I know of no place more lovely and interesting than the Diamond Mountains. In the glens and ravines, on the cliffs and peaks, there are a great variety of plants, and several like *Pentactina* are not known to grow elsewhere." This monotypic genus grows on the steep slopes near the Makaeon Monastery. It is a tufted plant with slender, arching stems and alternate, tufted leaves. The flowers are borne in terminal pyramidal panicles each from three to four inches in length. The individual flowers are small with a pale coloured calyx with reflexed lobes and narrow, spreading, strap-shaped petals; and the fruit is dry and surrounded by the persistent stamens which are reflexed. From *Spiraea* this genus may be distinguished by the shape of the petals and by the two-ovuled fruit opening along both sutures. This little shrub, as grown in the Arnold Arboretum, is a hardy and useful subject for a shady rockery but probably will not stand full exposure to the sun as its natural home is on the cliffs of well shaded ravines. As rockery shrubs are none too plentiful a use will be found for this plant where the conditions are suitable.

Horticultural Schools in Lithuania.—The school of horticulture and kitchen gardening in the Freida Estate, has been re-organised by the Lithuanian Ministry of Agriculture into a school of higher type for those subjects. The school will admit students who have finished not fewer than four classes. The course lasts three years. Specialists will be trained in horticulture and kitchen-gardening, so that they may be capable of conducting large-scale fruit farms, fruit-drying factories and similar establishments. Next year the Ministry intend to found a two-year higher school of cattle-breeding and dairy farming, the site of which has not yet been fixed.

Michaelmas Daisies in the London Parks.—Following the very useful system of enlightening the visitors in the London Parks belonging to the Crown, His Majesty's Office of Works has drafted the following very informative notes on the Aster or Michaelmas Daisy which will be displayed during the forthcoming season in the Royal Parks:—The name, "Michaelmas Daisy," was originally applied to only one species of Aster, namely, *A. Tridacanti*, a north American species which was introduced to this country prior to 1633 by John Tradescant, gardener to Charles I. It was, no doubt, brought over by his son who travelled in Virginia, and who, on his return to England, brought many new plants with him. The name now covers a large number of varieties, forms and hybrids derived from a number of species most of which, but not all, are American in origin. These can be divided into a number of groups. The *Amellus* group includes several distinct varieties of Aster *Amellus* which do not appear to have been crossed with other species. They are of dwarf, branching habit, with loose panicles of large flowers of various shades. The finest garden form is the variety King George. *A. Amellus*, itself a native of the south of Europe, was cultivated in this country by Gerard in 1596, and was formerly called Italian Starwort. Those of the *Cordifolius* group are of a very distinct type, with large, heart-shaped, basal leaves and slender flower stems, with long, pyramidal panicles bearing numerous small flowers. Two fine varieties of this group are *Photograph* and *Ideal*. The *Diffusus* group have long, spreading racemes of rather small flowers. *Horizontalis* is an old but distinct variety. The *Ericoides* group are all of a slender, branching habit with small, Heath-like foliage, and numerous small, whitish flowers. *A. Tridacanti*, the original Michaelmas Daisy, is a magnified form of this group, having rather large flowers and making a spreading bush from four to five feet high. Its decorative foliage and late habit of flowering

make it still a valuable plant. *Aster Novae-Angliae*, which was introduced from North America in 1710, has been the progenitor of a large group of garden forms of a distinct type with large flowers borne on erect, rather stiff, branching stems, with small, woolly leaves. They have a distinctive smell. Good varieties are *Lil Fardel* and *Ryecroft Purple*, but they have a bad habit of closing when cut. From *Aster Novi-Belgii*, also introduced from North America in 1710, has sprung the largest and most variable group of the *Michaelmas Daisies*, of erect growth and floriferous habit. Some of the group are only one foot high, while others attain a height of six feet. The flowers vary also in colour; white, pink, mauve, magenta and various shades of blue occurring. This may now be considered the most important group, and has of recent years been much improved in colour, size and habit. It is of easy culture, and will grow almost anywhere; but prefers a moist situation and a stiff soil. Quite small roots planted in autumn or spring will, with very little attention, produce the following autumn a wealth of colour and blossom, lasting several weeks. Their variety of habit and soft shades of colouring are charming, prolonging the joys of the garden until severe frosts cut them down, but otherwise doing them no harm. Those of the *Punicus* group are among the earliest to flower and are tall growers with soft foliage and fleshy stems. The *Viminea* group are of bushy growth, and bear numerous small flowers of no great decorative value."

Horticultural Exhibition at Lyons.—A horticultural and agricultural exhibition will be held in the Palais de la Foire, at Lyons, from the 3rd to the 12th November. The show will be organised by the Paris-Lyons-Méditerranée Railway, under the auspices of the Fair Committee of the town, and assisted by the local horticultural society. This event will presumably be arranged to harmonise with the arrangements made for the Chrysanthemum Congress and Show to be held in the same town from the 5th to the 8th of November, as mentioned in our issue of the 19th September (p. 222). The exhibition will comprise seven sections on the usual lines—cut flowers, flowers in pots, fruits, vegetables, etc.

French Cider Apples.—In a letter which appeared in a recent issue of *L'Echo de Paris*, it is stated that the French cider Apple crop this year is not likely to exceed 7,000,000 quintals—roughly, 680,000 tons—as compared with last year's crop of 45,000,000 quintals. The French cider-making industry view the situation with considerable anxiety, and resolutions have been addressed to the French Government requesting the restriction or prohibition of the export of cider Apples.

Control of Slugs.—In an article by Mr. W. E. H. Hodson in the *Journal of the Royal Horticultural Society* for September, entitled "Some Further Notes on the Control of Slugs," it is stated that aluminium sulphate and lime used as a contact poison has been found to be an excellent control measure against slugs, but its application on a large scale is hardly practicable. A poison bait of bran and Paris green, which is both cheap and easy to apply, is admirable for use when the area to be treated is of very considerable size. An ideal time for application is after a shower on a fairly warm evening.

Awards of Garden Merit.—The list of plants upon which the Royal Horticultural Society's Award of Garden Merit has been conferred is extended by the addition of *Narcissus cyclamineus*, *Iris reticulata*, *Leucojum vernum carpathicum*, *Chionodoxa sardensis* and *Helleborus orientalis*, all more or less well-known subjects. This brings the number of awards to forty-two.

Appointments for the Ensuing Week.—Monday, September 28: National Chrysanthemum Society's Committee meets. Tuesday, September 29: Royal Horticultural Society's Fruit show (two days). Wednesday, September 30: Mitcham, Tooting and District Horticultural Society's meeting. Thursday,

October 1: Manchester and North of England Orchid Society's meeting; Nottingham and Notts Chrysanthemum Society's meeting. Friday, October 2: Dundee Horticultural Society's lecture; Carlisle Chrysanthemum Show. Saturday, October 3: Blackburn and District Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Victoria Regia* at Chatsworth. The original plant of *Victoria Regia*, which was received here from the Royal Gardens at Kew, and of which a description and particulars were given in a previous paper, has now produced its 140th leaf and 112th flower bud; during the season of the plant's partial torpidity, a few of the buds then produced were removed at an early stage of their growth, lest so constant a succession of flowers should debilitate and prove otherwise detrimental to

of the large tank, shown at p. 549 in the mound of soil prepared in the same manner as described for the old tank. This was done on the 26th of June. The plant was partially sheltered for a few days, with a two-light frame placed over it, upon planks, until the growth commenced. When established the leaves unfolded rapidly, and the first flower bud made its appearance on the 28th of August which opened in its white and fragrant form on the 5th of September, and fully unfolded its centre on the following day; at this stage of its growth the leaves were four feet eight inches in diameter. A gradual increase in size has continued since that time, and the dimensions at present are about five feet, with a constant succession of flowers. The growth is remarkably vigorous, and the leaves appear very likely, in a short time, to reach the outer wall of the tank, although the

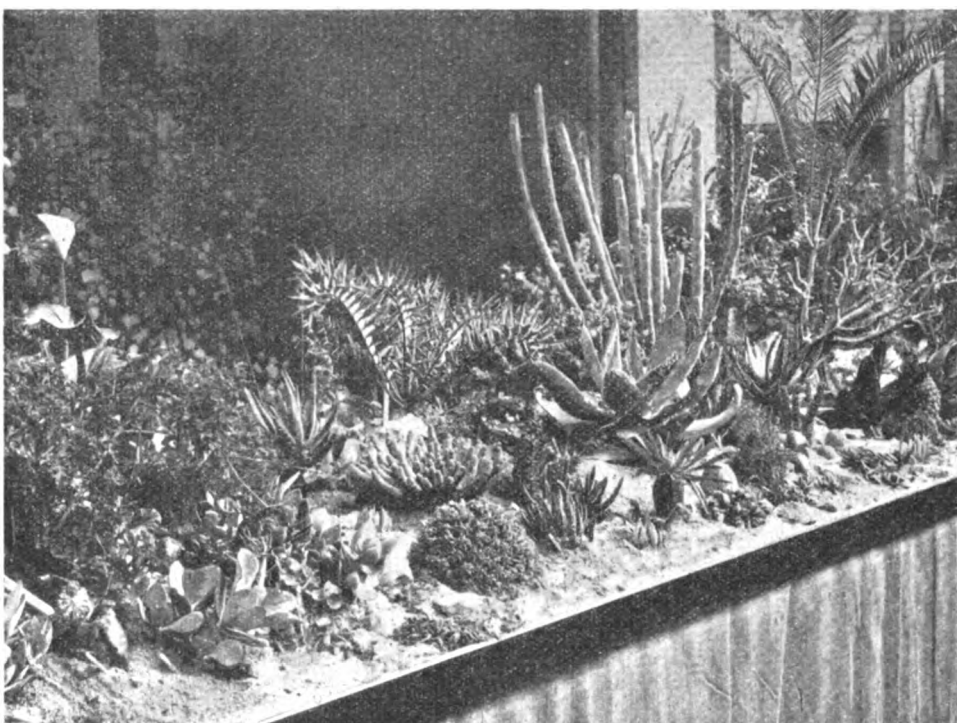


FIG. 97—PART OF AN EXHIBIT OF SUCCULENT AND OTHER SOUTH AFRICAN PLANTS SHOWN AT HOLLAND PARK BY THE SOUTH AFRICAN RAILWAYS (see p. 255).

the health and vigour which it was desirable the plant should sustain. The whole of those permitted to remain expanded their blooms perfectly, although during the brightest weather in summer it was found advisable to afford some degree of shade to the flowers, in order to prevent their becoming too fugitive, perishing in much less time than two days, the usual period of their duration. This old plant has now seventeen leaves, some of which are of a very large size, although there is an evident diminution in the dimensions of every leaf which now expands, evidently indicating that the plant is fast approaching its period of rest. From some of the early, as well as the more recent flowers, an abundance of fine plump seeds have been procured, from which a large number of strong plants have been raised and by the kindness of the Duke of Devonshire, have been widely and liberally distributed. The seed of the young plant, which now occupies the tank of the new house formerly described, was sown on February 12 last in a small pot, and placed in the tank occupied by the parent. The first leaf made its appearance on March 11, just one day less than a month after being sown. When the young plant had become sufficiently established, it was placed in the centre

diameter is thirty-three feet six inches; and, if we might judge from present progress, there is little doubt but next year the leaves will be much larger than any we have yet seen; indeed, at present, nothing can exceed the luxuriant and healthy progress the whole plant is making. The various species of *Nymphaea*, and other plants in the small tanks also, grow with remarkable rapidity. Amongst these may be mentioned *Nymphaea caerulea*, *rubia*, *Lotus*, *dentata*, and *odorata*; *Nelumbium speciosum*, *luteum* and others; and altogether the structure must be considered most satisfactory, as every species planted in it flourishes to a degree seldom met with.—*Joseph Paxton, Chatsworth. Gard. Chron., September 28, 1850.*

Publications received.—*Fungi as Food and in Medicine*, by M. Grieve assisted by E. Oswald. M. Grieve, Whins' Cottage, Chalfont St. Peter, Bucks. Price 1/6, post free.—*Garden Craftsmanship* in Yew and Box, by Nathaniel Lloyd. Ernest Benn, Ltd., 8, Bouverie Street, E.C.4. Price 15/- net.—*Monocotyledons; a Morphological Study*, by Agnes Arber. Cambridge University Press, Fetter Lane, E.C.4. Price 21/- net.—*Experiments in Genetics*, by Charles C. Hurst. Cambridge University Press, Fetter Lane, E.C.4. Price 50/- net.

The Week's Work.

THE ORCHID HOUSES

By J. COLLIER, Gardener to Sir JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Catasetum, Mormodes and Cynoches.—These Orchids will by now have bloomed or completed their season's growth, and may be removed from the warmest house to cooler quarters, where they may receive more air during the hottest part of the day. The plants should be supplied with water at the roots whilst the foliage remains green, but after the leaves have fallen and the growths are fully matured, very little moisture will be needed. They should be given a long season of rest in a dry position in the house.

The Warm House.—The amount of water supplied to the roots of *Angraecums*, *Arides* and *Saccolabium* should be gradually reduced, the atmosphere kept somewhat drier, and the plants accustomed gradually to more light and air on all favourable occasions, in order that the growth may be consolidated as much as possible before the dark days of winter arrive.

Peristeria elata.—This plant, which is known popularly as the Dove Orchid, will still need plenty of water at the roots, and should be gradually exposed to all the sunlight possible.

Chysis.—Plants of *Chysis bractescens*, *C. aurea*, *C. Sedenii* and others that now occupy a position in the Cattleya house, and are rather backward in their growth, should be removed to a house with a higher temperature in order to induce them to mature their pseudo-bulbs quickly. The roots will need plenty of moisture until the leaves commence to change colour, when the plants may be placed in a sunny position in the Cattleya house or Mexican house.

Trichopilia.—*Trichopilia suavis*, *T. Backhouseana*, *T. coccinea*, and others of this genus that flowered during the summer may be re-potted at this season. These Orchids succeed best when grown in shallow pans suspended from the roof of the intermediate house.

Dendrobium.—Plants of *D. Phalaenopsis* are sending up their flower spikes and should be afforded liberal supplies of water at the roots each time the compost becomes dry. After the faded flower scapes are removed much less moisture will suffice and the plants should be treated to a long season of rest. The evergreen section, which comprises such as *D. thyrsiflorum*, *D. densiflorum*, and *D. Farmeri*, will soon be completing their season's growth, and should be gradually induced to rest by removing them to somewhat cooler and drier conditions.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Cuttings.—Cuttings of Zonal Pelargoniums and other bedding plants inserted in boxes and stood out-of-doors in August will now be rooted, and it is advisable to move them under glass. If a pit or frame is not available for them, a shelf in the fruit houses, where crops are finished, and where the plants will receive an abundance of light and air, suits them well during the next two or three months. Use the watering-can sparingly, giving only just sufficient moisture to keep the stems plump and not enough to incite growth. Cuttings of various subjects inserted in cold frames last month, that have been kept close, will now be forming roots and should have air admitted gradually until they can withstand full exposure.

Herbaceous Borders.—Abundance of moisture has enabled many herbaceous plants to remain in a vigorous condition beyond their usual season, and the borders generally are looking extremely well for this comparatively late period

of the year. Continue to give constant attention to removing all decaying foliage and faded flowers at regular intervals, both for the sake of tidiness and to help the plants to continue in vigour. Keep Dahlias, Michaelmas Daisies, and other late-flowering subjects well-staked, as their heavy foliage and spreading heads lessen their resisting powers to autumn gales and it is better to be wise than sorry. Where the extension of existing borders or the laying-out of new ones is contemplated, the work of preparing the sites should be undertaken immediately in order that the ground will be ready for planting so soon as growth ceases.

Shrubberies.—Many of our trees and shrubs are now in the full glory of their autumn beauty; some of them making a rich display with their bright-coloured fruits, whilst the foliage of others is providing a study in autumn tints. Colour schemes produced by the grouping of trees and shrubs which bear highly-coloured fruit and foliage make wonderfully attractive features in the pleasure grounds at this season. They add much brightness to the garden when the wealth of summer colour is on the wane, and their merit compels consideration where planting schemes are being undertaken. There is abundant material available, giving the planter a wide choice and much scope for the production of beautiful effects, either by using coloured fruits, tinted foliage, or a combination of both. The natural order Rosaceae is very rich in fruiting trees and shrubs and, as in spring it takes pride of place in the floral display, so in autumn it is pre-eminent in the provision of bright fruits. The genus *Rosa* itself has many members which provide us with handsome and strikingly beautiful fruits, whilst the prolific and regular fruiting habit of many of the *Pyruses*, *Prunuses*, *Crataeguses*, *Pyracanthas* and *Cotoneasters* is well-known. Our native Spindle Tree and Guelder Rose usually bear heavy crops of berries and flourish in almost any type of soil, whilst in peaty soil, the *Pernettyas* grow vigorously, naturalise themselves freely, and seldom fail to produce their beautiful berries in great profusion, with colours ranging from pale pink to rich crimson.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Gloucestershire.

Sun-Blinds.—The time has arrived when few plants growing under glass will need further shading from sunshine this season, and where portable sun-blinds are used these should now be taken down, dried thoroughly, and stored in a dry, airy loft. Except in the case of late potted batches of plants which may need temporary shade for a few days after being potted, or the necessary retarding or preservation of any particular flowering plants, the plantsman's attention will be directed towards the provision of all available sunshine, and the maximum of light to his plants throughout the autumn and coming winter. To that end all temporary summer shading should be removed, indeed it will be advisable to thoroughly wash the whole of the glass on the outside of the plant houses as opportunity offers.

Stove Foliage Plants.—Brightly coloured plants such as *Codiaeums* and *Acalyphas*, to which it may have been necessary to afford partial shade during bright weather, should now be given the lightest, sunniest position in the stove, and as an aid to the heightening of colour in their foliage, an occasional watering with fairly strong, clear soot-water may be given.

Pot Roses.—Plants which are grown in pots for indoor flowering should be thoroughly examined, and any that may be requiring it, should be re-potted. Roses delight in a compost comprised mainly of strong, turfy loam, to which may be added a little well-decomposed manure, about a six-inch potful of a good medium grade bone-meal to each barrow-load of soil, and a little broken charcoal and a sprinkling of soot. The pots should be made thoroughly clean, crocked

carefully, though not lavishly. The greater part of the old soil should be removed from their roots, when the plants may be replaced in the same sized pots as they formerly occupied, potting them firmly. Those which do not need re-potting may be top-dressed with new soil after removing a good portion of the old compost from the surface, and making sure that the drainage is satisfactory. After potting, the plants should be stood out-of-doors in a fully exposed position, plunging the pots to their rims in ashes or fibre as a preventive against the breaking of the pots in the event of severe frost. Any extra long growths may be slightly shortened now. Later, the plants may be introduced to a cool house in batches as required, the necessary pruning being performed at the same time.

Sweet Peas.—Where Sweet Peas are required for spring flowering under glass the present is a suitable time to sow the seeds. Of various methods advocated by different growers, that of raising the seedlings singly in small pots, though it may entail extra trouble, is preferable; the young plants may be re-potted later or transplanted as desired, with very little disturbance of their roots. Seeds of very scarce varieties should be sown singly in the pots, but of the plentiful sorts, three seeds may be sown in a receptacle to avoid possible disappointment, which if they germinate may be reduced to one seedling in a pot. Do not cover the seeds to a greater depth than a quarter-of-an-inch. It is advantageous to place the pots containing the seeds closely together in boxes, deep enough to allow of their being plunged to the rims in turfy soil or fibre. The boxes should then be placed on a shelf near the roof glass in a cool house, where the seeds will be safe against the ravages of mice until they have germinated.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Early Vinery.—Where the vines in the early vinery are to be started into growth in November it will be advisable to shorten the shoots, except where they are needed for extension purposes, to about six eyes from the basal buds. This will greatly facilitate the ripening of the back buds preparatory to the final pruning. When the old spurs have got beyond a reasonable length it will be a good plan to remove the worst placed and endeavour to get a break close to the main rod; this will also help to keep the rods clean by removing the breeding places of many insects. Where the border is in a bad condition, and shanking, and poorly finished berries have been in evidence, the roots should be attended to. I prefer inside borders for early vines, the roots being more easily controlled. Remove the surface soil very carefully with small hand forks until the roots are reached. Have a number of damp mats ready to cover the roots, as they should not be exposed to the air and allowed to become dry. In this manner it is quite possible to remove the whole of the border if necessary. See that plenty of drainage is provided so that the superfluous water can pass away freely. Have the new soil ready to complete the operation as quickly as possible. Procure the best loam obtainable, not too heavy in texture, and proceed to lay the sods grass side downwards. Use plenty of good, clean mortar rubble and broken bricks, not too small, and some good cow manure with a six-inch potful of bone-meal for each barrow-load of the compost, and a coarse vine manure. Make the soil firm as the work proceeds, spreading out each layer of roots in its proper place, endeavouring to bring the whole of the roots nearer the surface. Where the vines and borders are in a satisfactory condition just clean away the loose surface soil and substitute about four inches of good, rich top-dressing material. Should the new soil be on the dry side give it a thorough good soaking with tepid water, and during bright days just damp the remaining foliage. If the growth is not ripening satisfactorily it may be found beneficial to keep the

house warm by day using a little fire heat, and then open the ventilators at night. I have found this answer for Muscats v. nes that have not been very strong and the wood inclined to keep green in place of the desired nut-brown tint. Paint the inside of the house, if possible, and burn all fallen foliage.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Orchards and Stocks.—The time is at hand when bush trained trees and young standards in large or small orchards should be examined to see if they are growing so vigorously as to need root-pruning. If the orchard is to be renovated with young trees no time should be lost in placing the order with the nurseryman, choosing varieties most suited to the particular soils. Where the sub-soil is of a gravelly nature or sandy loam and there is a good depth of surface soil, almost any kind and variety of fruit tree will do well, but in heavy clay soil some discrimination is necessary. Another point to consider is the kind of stock; for bush, horizontally-trained and cordon Apples the Broad-leaved English Paradise is undoubtedly the best stock because it is surface rooting. But for standard trees a deeper-rooting stock is required. Pears in bush, horizontal and cordon shapes should be worked on the Quince for heavy soils, this being a surface rooting stock. For standards the Pear stock is much more suitable being deeper-rooting and able to support the tree against high winds. Plums do well in heavy soils and in this case the nature of the stock is not so important. Cherries seem to do very well in most soils, whether heavy or light. The following varieties of Apples and Pears will not succeed well in heavy land. Apples: Alfriston, Cellini, Golden Noble, Lord Suffield, Emperor Alexander, Stirling Castle, Blenheim Pippin, Ribston Pippin, King of the Pippins and Margil, which is subject to canker. Pears: Beurré Clairgeau, Buerre d'Amanlis, Beurré Diel, Beurré Fouqueray, Louise Bonne of Jersey and Mrs. Seden. The fruits of the above varieties spot and crack very badly in dull, cold seasons.

Filberts.—These Nuts are approaching the ripening stage and should be watched daily against the ravages of rats, mice and squirrels. So soon as they are fit to gather they should be harvested and stored in some utensil that is mouse-proof.

THE KITCHEN GARDEN.

By H. PAIXCE, Gardener to the HON. MRS. GREVILLE, Polesden Lacy, Dorking.

Lifting Root Crops.—Attention should now be given to all root crops; examine them carefully as to those that require lifting. When the main Potato crop is ripe the tubers should be lifted on a dry day; there will be no useful purpose served if the crop is left in the ground too long. Store the tubers in a cool, dry shed, free from frost, or clamp them outside, according to whatever method is most convenient. Most of the Beetroot crop of the globe type, except the July-sown plants, will have been lifted by now and stored. The crops of long Beet will now require lifting. Exercise great care in order not to damage the roots in any way before they are stored. All Carrots, except the July-sown crop, should be lifted and stored in a cool shed. A few Parsnips should be kept in a clamp for use as required to save the trouble of digging roots during frosty weather. Most growers prefer to leave this crop in the ground and lift as required. Salsafy and Scorzonera should be lifted and clamped behind a north wall. Chicory when lifted should have the leaves cut off, and the roots stored in some convenient place. From now onwards, these roots may be forced in a Mushroom house as required, for salads.

Tomatos.—If the crop of outdoor Tomatos has not yet been picked, this should be done

at once. The trusses should be cut and placed under glass for the fruits to ripen; if left longer many of the fruits will rot on the plants from the heavy dews and rains. Late crops growing inside will require a little fire-heat at night to keep the air in circulation, and to help ripen and colour the fruits.

Vegetable Marrows.—In districts where Marrow plants have not yet been damaged by ground frosts, the fruit should be kept cut regularly and put inside a cool house for safety in order

damage to the plants if left unpruned, the snow being unable to penetrate the unpruned bushes with the same ease as those that have been pruned.

Lifting Bedding Plants.—Large specimen bedding plants required for next year should now be lifted and potted, even though they be yet fresh and untouched by frost. Such wall climbers as Cobaea scandens and Tacsonias should be removed to safe quarters. Lift all the plants required carefully and, after potting

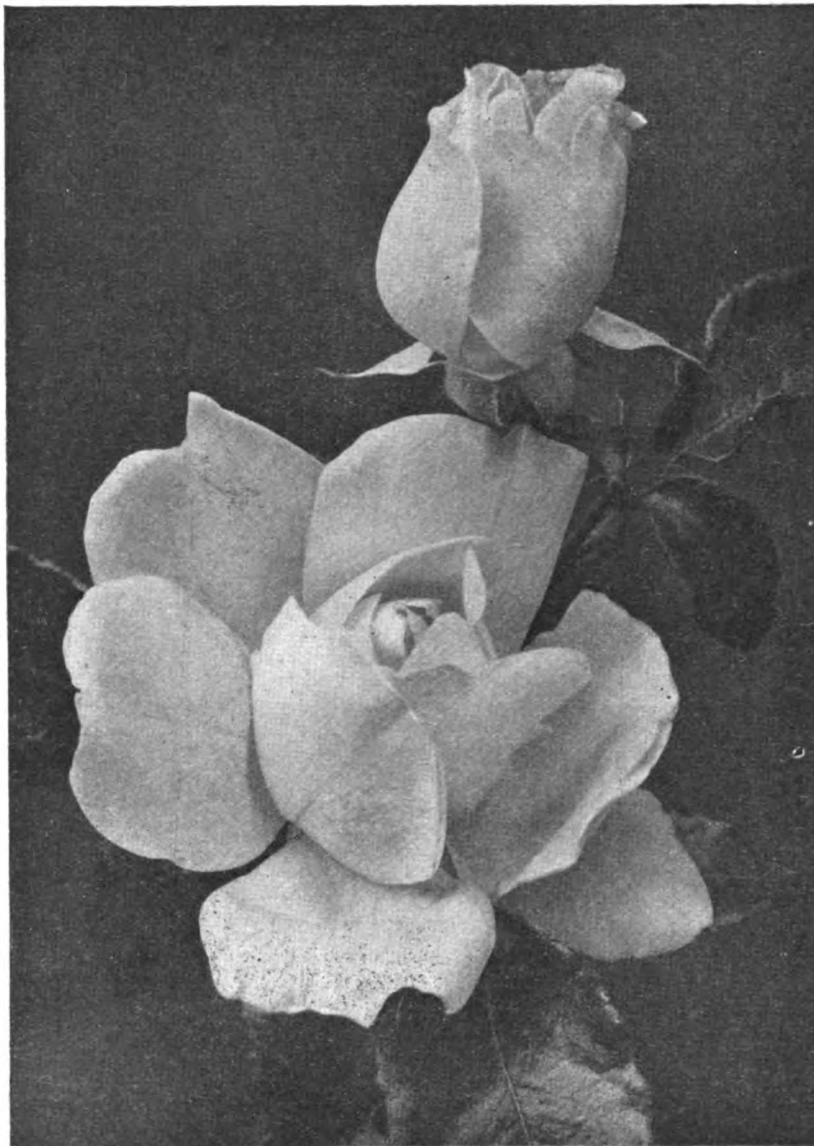


FIG. 98.—ROSE ANGÈLE PERNET.
N.R.S. Gold Medal September 17 (see p. 258).

to prolong supplies for as long as possible. All fully-matured Marrows required for jam should also be cut and put in a place of safety. If the weather still remains open supplies will be prolonged if a severe thinning of the growths is made, thus enabling the young Marrows to develop quickly.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Laurels.—The present is an excellent time for the pruning of both the common and the Portugal Laurel. Common or Cherry Laurels on banks are best cut now for the following reasons; the growth, if removed now, is not nearly so hard to cut as would be the case if left until spring; also, if the plants are not pruned before winter sets in heavy snow-falls will be liable to settle on and do great

them, give each a thorough soaking with water and stand them in the shade for about about ten days, spraying them overhead on frequent occasions during this period. The plants may then be housed and kept in cool conditions during the winter.

Wichuriana Roses.—Most varieties in this section have finished flowering, and require the growth thinned by removing all the old flowering shoots. If this is done the sun and air will reach the young growths intended for next year's flowering. The better these shoots of the current year are ripened, the better will they be able to withstand severe wintry weather.

Winter Spinach.—Plants of Winter Spinach raised from seeds sown some time since require thinning to a distance of about six inches from plant to plant. Keep the Dutch hoe at work around and between the plants, whenever the ground is in working order.

TREES AND SHRUBS.

KOELREUTERIA PANICULATA.

KOELREUTERIA paniculata is a very fine hardy, deciduous tree, having an irregular but very beautiful habit of growth.

Good specimens average about fifteen feet in height, but I am acquainted with a glorious tree of much greater dimensions.

The flowers are yellow, disposed in very large terminal panicles; the inflorescences are many-flowered and much-branched; they are produced very freely from June to August. The fruits or capsules are large and are a very conspicuous feature in the autumn.

The leaves are alternate, pinnate; the leaflets are opposite or alternate, membranous, and deeply toothed. This fine tree attains to the greatest luxuriance in a sheltered situation.

The plant may be propagated from cuttings formed of the young shoots, in spring, or by layers in late summer. *K. paniculata* was sent home from North China in 1763, and the name commemorates Joseph G. Koelreuter, one time professor of Natural History at Carlsruhe.

LOROPETALUM CHINENSE.

CREATING something of a sensation when introduced, this delightful winter-flowering shrub was reintroduced by Messrs. J. Veitch and Sons some years ago and attracted considerable notice, but it is rarely met with in gardens now.

The pure white flowers, closely resembling those of its near ally, *Hamamelis*, are produced with the greatest freedom in crowded heads, each inflorescence bearing six or eight flowers; the blossoms are produced at the tips of the branches and from the axils of the outermost leaves.

This Chinese plant is hardy in favourable situations, and is also excellent for pot culture; at one time it was thought that it would prove of great value as a winter decorative subject. However, it is a beautiful plant and well worthy of a place in the choicest collections of shrubs. *Ralph E. Arnold.*

HYPERICUM CUNEATUM.

THERE are hosts of lovely things among the dwarf, as well as among the taller *Hypericums*, or St. John's Worts, and one regrets that a number of the most beautiful sometimes resent our winters and pine away, longing for the warmer climes from whence they came. Of such is *Hypericum cuneatum*, which wet winters and sharp spring frosts have caused to vanish from my garden more than once. But to those with a dry climate, especially if the plant can be treated to lime or chalk, *H. cuneatum* is quite within the bounds of their cultural conditions, and should not be forgotten when new plants are being secured in spring.

Were it only for its foliage, this species should be welcomed, but when to this is added a wealth of golden flowers in sprays, the combination is irresistibly beautiful. These leaves, as the specific name would suggest, are wedge-shaped, and of a delightful colouring through the glaucous blue of their under surface. It is prostrate in habit, and forms branches some six inches or so in length, delicate and fragile-looking in appearance and adding to the general tone of refinement displayed by this lovely St. John's Wort.

H. cuneatum is easily raised from seeds, or increased by cuttings struck under glass, and it is wise to keep a few plants in reserve under glass to replace any losses which may occur during winter. In our climate, it should have a warm, dry, sunny place. *S. Arnott.*

BIG TREES AT HAMPTON COURT, LEOMINSTER.

IN view of the fine display of flowers on the Tulip Trees (*Liriodendron tulipifera*) this season, it would be interesting to know where the largest specimens in this country are to be found. At Hampton Court, Leominster, there are three good Tulip Trees all in vigorous health.

Another fine tree here is *Ginkgo biloba* (syn. *Salisburia adiantifolia*) and there are some fine old specimens of *Cedrus atlantica*. Many of the branches of the Cedars have been carefully secured by chains and yet all the trees appear to be in vigorous health.

Other fine trees here are Planes, Beeches and pollarded Oaks. All the past owners of this estate have taken a keen interest in these trees, many of which were planted by the Arkwright family, who were noted for their love of natural beauty. *G. H. E., Hereford.*

MAGNOLIAS.

MAGNOLIA stellata (syn. *Halleana*) is the gem of the Magnolias, and a bed of it in full bloom is worth a journey to see. It forms a bush some three feet to four feet in height, bearing pure white flowers in March. The latter are about four inches in diameter, and are composed of flat, strap-shaped petals which expand wide open instead of remaining cup-shaped as do most of the flowers of the genus.

The only fault is its earliness in blooming, which renders the blooms liable to damage by spring frosts, but a light canvas shelter may easily be fixed over the tree at night and removed in the daytime, the beauty of the flowers being worth the little time and trouble necessary to protect them from frost. *M. stellata* is a native of Japan.

M. tripetala is a large-growing species from the United States, forming a tree some thirty feet in height, with large, bright green leaves some twelve inches or more in length by six inches wide. The flowers open in June and July, and are of a creamy-white shade, with a somewhat unpleasant odour. The flowers, however, are not very conspicuous, the chief beauty of this tree being its handsome foliage.

M. Watsonii is a native of Japan and forms an upright bush some six feet in height, it has a superficial resemblance to *M. paviflora*. The flowers are ivory-white on the inside, flushed with rosy-pink on the outside, and have a central ring of crimson stamens. It is hardier than some other Magnolias but succeeds best in a sheltered situation. *J. C.*

ALPINE GARDEN.

ISOPYRUM GRANDIFLORUM.

MR. KINGDON WARD stated on page 191 that although he has sent home seeds of *Isopyrum grandiflorum* at least six times he does not know of any living plants in England at the moment. You may be interested to know that Mr. A. K. Bulley has plants of this *Isopyrum* growing on a moraine in his interesting garden at Neston, and I believe he flowers this species each year. Thanks to Mr. Bulley's generosity, we have also a plant growing in these gardens, where it has been for the past two years and is in perfect health. We also have a few seedlings germinated from seeds of Mr. Kingdon Ward's last consignment which I hope will become established plants.

The species evidently requires a well-drained soil but must not be allowed to suffer from lack of moisture. *F. C. Puddle, Bodnant Gardens, Tal-y-Cafu, North Wales.*

ACERANTHUS DIPHYLLUS.

LOVERS of the *Epimediums*, or Barrenworts, and the pretty *Vancouveria hexandra* will be glad to know something about the allied *Aceranthus diphyllus*, which is now, I see, again on the market, and which may be considered for planting in places where its allies thrive. It has been rare in cultivation, but may now be secured at quite a reasonable cost.

It needs a more select place than the *Epimediums* because of the delicacy of its beauty. It usually grows about four to six inches in height, and bears on slender foot-stalks little, toothed, shield-formed leaves and charming spikes of loosely-arranged, white flowers.

There are not many of these Japanese species in cultivation, and those who delight in choice

and rare flowers for the shadier parts of the rock garden or some specially pleasing corner in the wood garden, may well bear *Aceranthus diphyllus* in mind for planting in the spring. *S. Arnott.*

CARPET PLANTS.

VERONICA CANESCENS.

THERE is no prettier carpeting *Veronica* during the later summer, if at any time, than the subject of this note. Though a native of New Zealand, *V. canescens* is quite reasonably hardy in any free, gritty soil, and over this it weaves a delicate lace-work of thread-like stems and tiny, dainty green leaves which, during July and August, become bespangled with little China-blue *Speedwell* flowers of singular refinement and loveliness.

Though it has a way of disappearing during winter, even in gardens where it prospers, *V. canescens* almost invariably produces self-sown seedlings which crop up in spring in all manner of unexpected places.

In this respect it resembles that other lowly carpeter, *Mentha Requeienii* and, like the latter, it makes a first-rate plant for paths and flagged walks. Should any doubt exist as to *V. canescens* surviving the winter it is a simple matter to pot up a few rooted scraps and give them frame protection until spring. *A. T. J.*

RANUNCULUS NYSSANUS.

THIS is one of the plants which appear more frequently in catalogues than in gardens, yet it has its uses in the latter, and may be thought of by those who require a flowering plant that will send out runners and will quickly form a mass of rather woolly, furry leaves, and, in June, give good yellow blooms of a fair size. The latter will not last very long; this *Crowfoot* may also be employed as a carpeter for early bulbs, which will do no harm to *R. nyssanus* and it would do excellently as a carpeter for autumn *Crocuses* or *Colchicums*.

The plant is not difficult to cultivate even in poor dry soil in full sun, although in such a medium and situation it will not attain its full height of about one foot, and may give its flowers on stems six inches high or even less, as I have had them in exceptionally dry places.

This *Crowfoot* is quite hardy and increases rapidly by means of runners. These root, and may be taken off in spring or autumn. *R. nyssanus* is easily procured and may be purchased and planted from September onwards until frost occurs, or in spring. *S. Arnott.*

HARDY FLOWER BORDER.

TIARELLA CORDIFOLIA.

FOR many years this was the only species of *Tiarella* in cultivation, and it is often planted in the front of the herbaceous border, and where its somewhat heart-shaped, pretty leaves and numerous spikes of creamy flowers show to advantage, the gracefulness of the inflorescence being one of its greatest assets, and this has given rise to the popular name of *Foam Flower*.

A few years since, a variety of taller growth and with pinkish flowers was sent out under the name of *T. cordifolia major*. It has become popular, although it has not ousted the older *Foam Flower* from gardens; but it is worth growing for its own intrinsic merits. It is taller and more robust than *T. cordifolia*. Since its introduction as *T. cordifolia major* it has been discovered that it is a distinct species and that its proper name is *T. unifoliata*. *S. Arnott.*

ALSTROMERIA AURANTIACA.

THIS excellent perennial seems to receive far less attention than its beauty and usefulness deserve. As a cut flower, with stems sometimes attaining to over four feet in length, carrying twenty or more Lily-shaped, orange-coloured flowers, gracefully displayed, it well repays cultivation.

A. aurantiaca has been grown in increasing quantities for Covent Garden for some years

past, and appears to be more favoured than its paler or darker congeners. It is, in my experience, much freer flowering than the latter and a more popular colour.

The plant establishes its roots in thick masses at about nine inches below the surface, and requires deep cultivation and heavy manuring if length of stem and numerous flowers are desired. Shallow planting—less than nine inches—generally proves very unsatisfactory.

September and October are ideal months for planting, but few flowers must be expected the first season. The check to growth which follows movement of roots seems unavoidable, but once established, the plant grows freely and its disturbance may be delayed if thinning or cutting out the stems be persistently practised. *A. J. S.*

POTERIUM OBTUSUM.

It is surprising that this plant is not grown in larger quantities by lovers of hardy plants. It is a very distinct and beautiful member of the Rosaceae. Soft, fluffy, pink bottle brushes are produced on erect, wiry stems which grow to a height of about three feet. This plant is most useful for supplying cut flowers, and when staged in the exhibition tent the flowers frequently draw appreciative remarks from visitors.

It is not a difficult subject to cultivate: on heavy ground it is advisable to prepare a site by incorporating peat or leaf-mould. It grows freely in an open, sandy soil in full sunshine, provided it does not suffer from lack of water at the roots. In this position a mulch of leaf-mould or peat is beneficial.

The inflorescences are produced in August, when pink flowers are none too plentiful. The plant is increased by division of the roots. *C. Ruse.*

BULB GARDEN.

COTTAGE TULIP ORANGE KING.

THE list of varieties of scented Tulips is so very brief that I may be pardoned for directing attention to this very desirable variety which, up to the present, has not attained the popularity it deserves. In *Tulips*, Present-day Gardening Series, the Rev. J. Jacob, describes it thus: "Orange King (medium height), a splendid red-orange flower of much substance; ideal under electric light, good sized flowers," but no mention is made of its exquisite perfume. For some time after the flower spike gets through, the upper leaf clasps the bud so tightly that one fears the flowers will be deformed. Let them be, they come out all right in the end, and are equal in size and form to the Darwins Suzon and Franz Hals.

As regards the very distinct colour, I neglected to water some that were growing in tubs during the very hot weather—the deep orange shade faded and left the flowers a beautiful magenta, which an artist friend declared was the true ground colour. Nature had simply washed it over with Chinese Orange and so produced the distinct and pleasing shade. It is a rather late variety, and keeps in splendid condition for a very long time. *S. B. Dicks.*

LILIUM CANDIDUM.

REGARDING your remarks (p. 121) on the U.S. Department of Agriculture booklet, dealing with the commercial production of this Lily, it may interest you to know that *L. candidum* flourishes amazingly in many parts of the United States of America. Near my home in New Jersey, is a big mass planted fully ten years ago, under a Pine tree. The bulbs get no attention, but each year they send up stems some five feet high, and bloom abundantly. This Lily grows well in my garden, but I had to plant a new batch last fall because the builders, when repairing the front porch two winters ago, tramped my first planting out of existence.

The finest candidum bulbs I ever saw were exhibited recently at the S.A.F. exhibition at Buffalo. They were grown at Knoxville, Tennessee, and the largest single bulbs were fifteen inches in circumference, whilst clumps

of four bulbs offered to the trade as one, were at least twenty inches around. The grower informed me that he has always grown this Lily for his local trade, his stock coming from local gardens where, presumably, the bulbs had been growing since the early colonial days.

This country seems particularly adapted to Lily culture, for I have greater success with various kinds than I ever had in England. I am raising many sorts from seed, and hope some day to flower the Himalayan giganteum. *L. tenuifolium* this year was fully a yard high and set seeds in abundance. *L. Willmottiae* carries several pods as does *L. regale*. *L.*

novelty kill and devour their prey. *Gladiolus primulinus* is one of the last to be thrown into the amphitheatre. That is all. I know I must be in a minority in my advocacy, but I do think the varieties which most nearly feature their ancestor, *primulinus*, are far more beautiful than those which have deviated the farthest from its distinctness and grace. It is true that its progeny display a tone of colour which is very pleasing and which they owe to it entirely, but to me at all events this does not outweigh the disadvantages of size, change of style, and overcrowding which are found in so very many.

A new section is advocated by dealers called



FIG. 99.—ROSE JULIA COUNTESS OF DARTRY.

N.R.S. Gold Medal, September 17 (see p. 258.)

Sargentiae has many bulbils on the stem, while *L. tigrinum splendens* makes bulbils in abundance, these growing the following year without any attention. The commoner *L. umbellatum*, and *L. Hansonii* grow with ease, and *L. Henryi* and *L. speciosum album* seem happy. *L. regale*, by the way, grows like a weed at Knoxville, Tennessee, and if the grower of these wanted to, he could raise millions. As it is, he has many thousands of bulbs raised both from seeds and bulblets. Out in the north-west, *L. auratum* establishes itself readily, growing twelve feet or more tall. *T. A. W., New Jersey, U.S.A.*

GLADIOLUS PRIMULINUS.

ALAS and alas! What is the fate of *Primulinus*? "Butcher'd to make a Roman holiday!" European society looks complacently on ever and anon while the lions of size and

medio-prims. This shows how far from the original type its descendants have got. Even in the "prims" they are by no means all of them, "according to Cocker," in my way of thinking. This is more or less how I regard them—Anita is my limit of closeness of individual blooms on the spike; Alice Tiplady and Athalia are the limits of size, while the hand-wave petal always must be at least as prominent a feature as in *Souvenir*. Some who agree with me may be glad of a few names—*Souvenir* (yellow), *Woodcote* (red), *Athalia* (orange-rose), *Dixmund* (white), *La Meusea* (?), (white with rose tips to the petals) and *La Selle* (warm salmon-pink), are a half-dozen which will not disappoint those who appreciate the refinement of the original. How about *Nydia*? It is not included because it is an under-glass flower, and I always think, now I know it better, a little disappointing in the open. *Joseph Jacob.*

FORESTRY.

PLANTING PEAT BOG.

THE planting of bog lands not only claims attention on account of the vast area of this type of land both in Great Britain and Ireland, but also owing to the ever increasing demand for timber of home growth. Moreover, by reclaiming these boggy swamps, they would not only prove a source of revenue to the owners, but also have a most beneficial effect in embellishing and improving the climate of the particular districts in which they occur. In connection with this it is interesting to learn that the matter is at present receiving a considerable amount of attention, and that a paper on the subject will be read at the forthcoming World's Forestry Congress.

To those who are interested in the reclaiming of peat-bog by planting, I may mention that my father, in 1862, formed several plantations on such a class of soil, on an estate in the north of Ireland, a full account of which will be found in the *Transactions of the Highland and Agricultural Society of Scotland* for 1873. On several occasions since, I have made a point of visiting and examining these plantations, when I was agreeably surprised to find how well they had succeeded, as also the height to which the trees had attained, their cubic contents, and prices at which the timber was being sold. The descriptive particulars of the bog previous to being drained and planted are as follow:—The bog is fully exposed, about sixty feet above sea level, and distant from Lough Neagh about three miles. Some small areas had been cut over as fuel, and, here and there on knolls and heights, which rarely rise more than a couple of feet above the surrounding bogland, a few stunted trees of the native Pine and Birch struggled for existence, but otherwise the whole extent was a flat and dreary waste, that was only utilised for snipe shooting, the production of Heather for broom-making and turf for fuel, the latter being used by farmers and work-people on the estate. The shrubby vegetation in addition to Heath, consisted of the Bog Myrtle, Cranberry and Creeping Willow, while Sphagnum, Cotton Grass and Sundew as also other of the attendant minor plants, were abundant.

The whole area consisted of deep, rank, fibrous peat, from almost black to light brown in colour, formed of the remains of bog plants in various stages of decomposition, caused by the excess of stagnant water which it contained, thereby excluding the action of the air, and rendering it cold, water-logged, soft and shaly, and quite incapable of acting as the food of trees.

Drainage was first resorted to, or rather, after the Heather had been burnt off, the principal main outlet being thirty-three feet wide at the surface, from eight to ten feet deep, and the banks cut with a slope of forty-five degrees. This ran along the south-west side of the bog, and joins the river Blackwater which falls into Lough Neagh, at Maghery. The sub-mains were eight feet wide at the top, three feet at the bottom, and five feet deep. The minor drains were cut three-and-a-half feet wide at the top, three feet deep, and eighteen inches wide at the bottom, the distance apart varying according to requirements, from twelve to twenty-four feet. The whole of the peat brought to the surface when draining and otherwise preparing the ground, was broken up and spread evenly over the bog, and allowed to lie and drip for twelve months previous to tree planting being carried out.

Soiling was engaged in during the winter months, this consisting of clayey loam that was obtained largely from estate cottages, and mud cabins that were being demolished on the estate, and was brought and deposited on the surface of the bog by means of a light railway that was capable of being wrought by manual labour. The rails were in sections, eleven feet long, and of such a weight that a couple of men could readily shift them as desired. By means of a turning table, the wagons were directed to any point where soiling was engaged in. The pits were then opened, at distances which varied from three-and-a-half feet to

four feet apart, and in size from twelve inches to fourteen inches diameter or square. About two shovelfuls of clay were added to the peat removed from the pits, the whole being allowed to lie fully exposed to the action of the weather until the following spring.

Planting was commenced in March, the trees used being mostly seedlings, one-year transplanted Larch and Scotch Pine, and in the proportion of two-thirds Pine to one Larch, with the exception of a few Douglas Fir, Black Spruce, Lawson's Cypress, and Austrian Pine, which were placed principally along the sheltered margin of the plantation. In planting, each man was provided with a boy, who inserted the plants in the previously mixed clay and bog, keeping the strongest roots to the most exposed side, and after firm tramping of the soil the operation was completed.

Owing to the softness of the bog lands generally and the action of the wind in moving the plants backwards and forwards, the trees are apt, for some time, to get swayed to one side, which should receive prompt attention. Most of the trees used in the formation of this particular plantation had been grown on home nurseries on the estate, one of these being on the edge of the bog, where the largest plantation was formed from which the trees were brought as required to the planting ground.

The chemical composition as well as the physical properties of the bog have now undergone a great change, the soil with which it was incorporated having not only added weight and firmness to the surface, but also assisted decomposition, and rendered the whole surface a rich bed for the roots of the trees. The growth of the trees, by taking up superfluous moisture, has rendered the three-feet drains quite dry, and with the exception of the main have not required to be cleaned out for many years. The bog in the plantation has sunk considerably, in some places as much as two feet.

As regards rate of growth and value of timber produced, it may be stated that at the age of twelve years most of the trees were eleven feet high, and at twenty-two years the Larch butts contained two cubic feet each and were sold at 1/8, the tops being sold separately for stakes and rustic fencing. When planted forty years, I again examined the plantation and took measurements of both Larch and Scotch Pine that were felled for disposal to the neighbouring coal mines. The Larch contained just over thirty cubic feet, the Pines fully more, and Spruce nearly similar to the Pines. For the best Larch butts nine feet in length, 9/- each was being received, the Pine and Spruce realising 7/6 each. Spruce timber is greatly valued in Ireland for the making of ladders, being comparatively light and of good lasting properties. When last I visited this plantation, the few remaining trees averaged fifty-five feet in height, some of the best Larch having been sold for 30/-, while both Pine and Spruce had realised 22/- each.

In the planting of peat bog, several important factors must be borne in mind, such as that preparation in the matter of drainage and soiling should take place at least twelve months before the plants are inserted. Secondly, bog land should be planted preferably in the spring, as, if done in the autumn, the cold and tannin which the bog contains have an injurious effect on the roots before growth commences. Large plants are not desirable, as from the softness of the bog they are easily upset. Two-year seedlings one year transplanted have been found best adapted for planting on peat bog, being at that age, and so treated, possessed of an abundance of fibrous roots with stout, well-furnished, stocky stems.

Regarding the quantity and quality of timber produced on peat bog, both are inferior to that produced on most other soils of fair texture, but even taking this into account, it must be admitted that the returns are quite satisfactory. The above experiment in the reclamation of peat bog by tree planting has turned out so successful, after a period of well over sixty years that it should act as an inducement to owners of similar tracts of land to convert some at least of these barren wastes into thriving plantations. A. D. Webster.

NOTICES OF BOOKS.

A Class Book of Botany.*

THE course of botanical study drawn up in this book may be compared to some of the older books, termed practical botany, in which the practice consisted chiefly in making sections of various plants with a razor, and in examining the same under the microscope. The histological structure of plants is here practically ignored, except in so far as it is necessary to elucidate the life-histories and vital activities of plants. For instance, the chapter of the germination of seeds commences with the conditions necessary for germination, and the student is instructed to find out whether seeds absorb water, whether light is necessary, whether moisture is necessary, the effect of temperature and whether or not oxygen is necessary. Concerning absorption, the student is instructed to cover the arils of some Castor Oil seeds, the pointed ends of dry grains of Maize and Sunflower fruits with rubber solution. These are to be put in a vessel of water along with some untreated seeds in order to compare which of them absorb moisture the more readily. Presumably, the untreated seeds would swell up more rapidly than the treated ones. Incidentally, this experiment would also indicate that the water is absorbed chiefly through the micropyle. All the other questions above-mentioned are dealt with similarly by telling the students of some simple expedients to try and solve the problems for themselves, by subjecting some seeds to certain treatment and using others as a control. Practically this is a study of plant physiology by certain defined experiments; for there is no course of lectures from which the students can glean the information by simply listening or taking notes.

All the other questions that arise in a study of plants are dealt with by practical methods, in relation to light, air, transpiration, absorption, functions of the different parts of plants, food storage, nutrition, geotropism, heliotropism, and other tropisms, irritability, and the newer study of ecology. All this implies study in a class room that is also a well-equipped laboratory with its various chemicals, reagents, utensils, microscopes, and simple lenses.

Ecology involves a study of plants in their native homes, and this means field rambles, experiments in restricted areas, such as a piece of garden ground, where one can clear the soil and make observations as to what plants appear first, how and whence they come. One experiment is to isolate by wire netting a piece of ground that is usually grazed, and observe what occurs as a result of this protection. This, of course, would take years of observation, and study, and could scarcely be carried out by one set of students. The second part of the book deals with reproduction, floral mechanism and the classification in seventeen families of plants. The bearing of botany on practical agriculture and horticulture is constantly kept in view.

There are numerous useful and well-defined illustrations some being line drawings, and others reproductions from photographs. The book is packed with facts from beginning to end, which imply a much wider study than botany received a few decades ago; while the dominant feature here is the numerous experiments that the students have to carry out themselves, under instructions. This compulsion to direct observation is well-calculated to impress the facts upon the memory, if the students are diligent and capable of being instructed. The course is intended to prepare the students for university matriculation, school certificate, senior local, etc.; and as a guide to what may be asked, some hundreds of recent examination questions are appended to the chapters. At the end of the work is a monthly calendar showing what material is available, the lists of wild plants in flower in the several months being very complete.

* *A Class Book of Botany*. By Ernest Stenhouse, B.Sc. (London). Associate of the Royal College of Science, London. Author of "An Introduction of Nature Study," &c. Macmillan and Co., Limited, St. Martin's street, London. 1925. Price 7s. 6d.

INDOOR PLANTS.

GLORIOSAS.

THERE is not a large number of species of *Gloriosa* in cultivation, but the flowers of all are so distinct in character and colouring that a few plants of each may be grown in a collection of stove plants with considerable advantage. They have much to recommend them, for they are comparatively easy to manage and produce their quaint and beautiful flowers during the late summer and autumn, when there is by no means a superabundance of flowers in the stove or greenhouse.

The *Gloriosa* is a tuberous-rooted plant, and the shoots, which are slender and furnished with neat green leaves, attain a length of six or more feet according to the strength of the tuber and the manner in which the plants are handled. The leaves are provided at the points with tendril-like appendages which will clasp the trellis and support the plant. The slender and flexible character of the stems admits of their being trained to balloon or other trellises, but a more pleasing appearance is presented when they are trained to the rafters of the stove, as the flowers, owing to the peculiarity of their structure, are shown to much greater advantage. The pots should be placed at the end of the stove and the growth trained just under the rafter.

As each tuber will produce one stem only, it will, in the majority of cases, be desirable to put several in each pot. If it is intended to produce large specimens and to train them to a trellis put five or six in a pot, and even in a case of those intended for training under the rafters, a better effect can be obtained by having a number of tubers in each pot, as the growth may be regulated to produce a display of flowers over a considerable area.

It is sometimes said that the tubers may be put into the pot in which it is to flower, thus rendering re-potting unnecessary, but it is better practice to put them at first in a medium-sized receptacle and shift them into their flowering pots when the shoots have made six or nine inches of growth.

The *Gloriosa* is not so exacting as to compost as some stove plants, provided it is moderately light and rich: probably no compost suits it better than a mixture of turfy loam, peat and leaf-mould in equal proportions. The material should be broken up moderately, well-mixed together, and for the first potting a liberal addition of sharp sand should be made. Efficient drainage should be provided, for liberal supplies of water will be required during the growing season, and it is most important to guard against the soil becoming saturated and sour through the superfluous moisture not being able to escape freely.

A brisk bottom heat is of great assistance in promoting early growth, therefore, if practicable, the pots should be placed in a bed of fermenting material, when the plants are first potted. A good season of rest is essential and so soon as the flowers fade, the supply of water at the roots should be lessened, and when the leaves assume a yellow appearance it should be withheld altogether. As the stems die down, the pots may be laid on their sides underneath the stage and be allowed to remain there until the following March.

Most of the species in cultivation may be regarded as either *G. superba* or *G. virescens* (simplex), *G. Rothschildiana* and *G. Carsonii* coming under the latter species, although for garden purposes they may be regarded as distinct. W. Auton.

A NEW CARNATION.

THE following variety of Perpetual-flowering Carnation has been registered with the British Carnation Society:—

Lady Margaret Boscawen, a variety of clear pink colour with good stem and calyx, and free flowering. The bloom is well up to the average size of these flowers. Registered by Messrs. Lowe and Shawyer, The Nurseries, Uxbridge, Middlesex.

HALF-AN-HOUR IN THE OXFORD BOTANIC GARDEN.

HALF-AN-HOUR is an entirely absurd period in which to explore a botanic garden, but when the botanic garden is the charming old one at Oxford, it is possible to discover many fine plants therein, especially if Mr. Baker, the eminently capable Curator, acts as guide. Oxford Botanic Garden is a treasure house of interesting plants, and Mr. Baker possesses a fund of information as interesting as the famous garden over which he has presided for many years. Within thirty minutes I renewed acquaintance with the grand old *Sophora* that

Dictamnus, it makes a charming plant for the wall garden.

Cydonia cathayensis is conspicuous by reason of its hard and vicious thorns and its big fruits which are far larger than those of its more popular relative so widely known as "The Japonica." A columnar form of *Cupressus Lawsoniana* deserves to be perpetuated. It is a seedling, and I have never seen such a strictly columnar variety of this variable Conifer. Close by is a fine specimen of the glaucous-hued *Boskoop* form of this popular species and a few yards away is a thriving standard of *Davidia involuerata*; this last was a bush specimen for some time after it was planted, but Mr. Baker's genius has converted it into a shapely standard which ought to hang



FIG. 100.—*PRUNUS LAUROCERASUS* VAR. *MAGNOLIAEFOLIA* AT ALDENHAM HOUSE GARDENS. (see p. 251).

stands "within the gate," and observed that the passage of time has improved the grace and beauty of the splendid specimens of *Taxodium distichum* and *Ginkgo biloba*. The spreading head of *Ostrya carpinifolia* invariably arrests the attention of those who have eyes to see more than lies about their feet. This carries numerous bunches of Mistletoe and has to be watched at Christmas time lest the youth of Oxford should convert portions of the parasite to the usage of that period. Oxford Botanic Garden possesses the proud distinction of having Mistletoe growing on plants representing no fewer than sixteen genera.

Genista aetnensis continues to flourish on the wall where *Akebias* and *Magnolias* and other fine plants find a genial home. In the beds close by, conspicuous among other attractions were colonies of the lovely *Colchicum Bornmuelleri* and the chastely beautiful *C. speciosum alba*. Here, too, was *Origanum Tournfortii* scarcely so beautiful perhaps as the Cretan *Dittany*, but hardier, and therefore worthy of note, but, like the delightful *Origanum*

out its "silk handkerchiefs" in the near future. *Corylus Columna* is represented at Oxford by a very fine specimen, and its near neighbours are capital examples of *Broussonetia papyrifera*, the Paper Bark tree; *Ptelia trifoliata*, fruiting freely; and the white or silkworm Mulberry. On the walls of the Herbarium and Laboratory many kinds of *Clematis* flourish and I was particularly attracted by *C. Pitcheri* which has numerous small, velvety, blue-purple flowers.

Belladonna Lilies are flowering finely in the narrow border in front of the greenhouse while in the Water Lily house, *Nelumbium speciosum* is carrying its quaintly-formed, erect seed heads which are evidence that it has flowered well this season. In the same house the yellow *Limncharis* is still flowering after providing bright blooms for several months. The giant Paper Reed, *Cyperus Papyrus* (*Papyrus antiquorum*) is also finely represented in the Water Lily House.

A peep at the "foundations" of the new rock garden brought a hurried but pleasant visit to a close. C. H. C.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 4, Tavistock Street, Covent Garden, W.C. 2.

Editors and Publisher.—Our correspondents would oblige by delaying in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.

Special Notice to Correspondents.—The Editors do not undertake to pay for any contributions or illustrations or to return unused communications or illustrations, unless by special arrangement. The Editors do not hold themselves responsible for any opinions expressed by their correspondents.

Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 4, Tavistock Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Urgent Communications.—If sent by telegraph, these should be addressed "Gard. Chron., Kand; or by telephone, to Gerrard, 1543.

THE GARDEN IN ANTIQUITY.

XII.—ANCIENT HINDU GARDEN-LORE.

It seems natural to pass from old-world China to ancient India. When the hymns which are collected in the Rig Veda were composed, some twelve or more centuries before Christ, agriculture was already practised to some extent. Just as the Chinese *Book of Odes* has to be studied for early allusions to favourite flowers, so the poets of ancient India must be examined for information which throws light on Hindu garden-craft. Take, for example, such lines as these.

"She roved in the vernal morning among the twining Vasantis covered with soft blossoms, when a damsel thus addressed her—The gale that has wanted round the beautiful Clove plants breathes now from the hills of Malaya. The blossoms of the Bakul are conspicuous among the flowers covered with bees. The Tamala, with leaves dark and odorous, claims a tribute from the Musk, and the clustering flowers of the Palasa resemble the nails of Kama. The full-blown Cesara gleams like the sceptre of the world's Monarch—Love, and the pointed thyrses of the Cetaca resembles the darts by which lovers are wounded," and so forth for many lines in which the Patali flowers, the fragrant Madhavi, the creeping Atimukta, the Amra tree, the Mallika and many other blossoms and plants are mentioned, some of which will call for further reference as our study proceeds.

In an article on Mount Caucasus which appeared many years ago, in that invaluable repertory known as *The Asiatic Researches*, we read that "Muslimans as well as Christians have assigned many situations to the garden of Eden. The Hindus are equally extravagant." The writer, who is far from being a trustworthy etymologist adds that "the word Eden is, perhaps, derived from the Sanskrit *Udyan*, which, as well as *Vatica*, signifies a garden." I introduce the passage, not to support his idea, that the Hebrew and Sanskrit are related, but to show how, incidentally, light often comes to our subject from out-of-the-way quarters. In early literature we not only find *Vatika*, but *pushpa-vati* a flower garden,

and *vriksha-vatika* an orchard; showing that already a distinction was made between the place in which flowers (*pushpa*) were cultivated and that in which trees (*vriksha*) were grown. Each of these words enters into the names of many trees and flowers in the same way that *fa* and *muk* do in Chinese. Thus we get *naga-pushpa*, as the name of several flowering plants, *vija-pushpa* the Citron, *visha-pushpa*, the blue Lotus, *sutra-pushpa* the cotton plant, and many others. Similarly *chaitya-vriksha* was a Fig tree growing in a holy place, *kalpa-vriksha* a fabulous tree which granted all desires—a tree to be desired to make one wise, as we read in Genesis, and *kshira-vriksha*, *Ficus plomerata*. Concerning *udyan* or *udyana*, a grove or garden, mentioned above, Professor de Gubernatis states (*Myth. des Plantes*, I, 182), under the heading of Jardin, "The Sanskrit name for a garden is *udyana*, a word which signifies a place which is raised or elevated. If the stars are the flowers, if the sun, moon, and clouds are the trees, then clearly the sky is a garden or *udyana par excellence*—the first of gardens. Paradise is always a pleasure garden. And just as each terrestrial monarch has his *udyana* annexed to his palace, so among the heavenly kings Indra is the lord of *nandana* or the garden of sensualism, while Varuna also has his pleasure which is known as *Ritumat*."

Nor are these the only names for a garden or park to be found in the early writers. *Arama* has the same meaning, and from it is derived the term *antarama* which means one who finds his pleasure in his soul. *Pushpa karandaka* is another word for a garden, signifying, literally, a flower box or basket, as if to suggest that flowers were long ago grown in such receptacles. From the verb *kam*, to love, we get *kama* desire, love, which yields words for pleasure, and so *kanyaka* a desirable place, the name of a grove or forest. *Paradesya*, although frequently connected by inexpert etymologists with the Old Persian word from which we derive our paradise, really has no relation to gardens, but rather alludes to foreign lands. One of the names for paradise was *mandara*. Some names for garden now in use in India are not Sanskrit. We may recall the word *gulistan*. There is among the most attractive features of Bangalore—a picturesque garden known as the Lal Bagh, or Red Garden (*Kew Bulletin*, 1889, p. 21). Here the word *Bagh* is the same as we find in Baghdad and elsewhere. A gardener is in some parts called *Malee* to-day. The garden of Indra, concerning which Buddha must have heard in his boy-hood was situated at the celestial north pole. Here grew five sacred trees of which one was the *mandara*. This name is sometimes given to the Coral tree (*Erythrina indica*) whose bright scarlet racemes are followed by pods several inches in length, containing large, smooth, dark red seeds. It is also applied to the Swallow-wort (*Asclepias*). One may quote the beautiful words of Coleridge, when alluding to these mythical and early historical times, and say—

And there were gardens bright with sinuous rills,

Where blossomed many an incense-bearing tree;

And here were forests, ancient as the hills,
Enfolding many spots of greenery.

The love of flowers has always been a feature of Hindu life. The people have employed them from the earliest times in their festivals, temples, homes; and have consecrated them to many uses. In the days of the now forbidden Sati or Suttee, the women, when about to ascend the funeral pile, adorned themselves with chaplets and garlands of sweet-scented flowers. It was also customary for them to present garlands of flowers to the young women who attended them to their immolation.

Mention is frequently made in the life of Buddha to the pleasure grounds, parks and gardens which were attached to the palaces in his day, say about five centuries before the birth of Christ. The following illustration is condensed from the translation of a legend engraved on a silver plate which was found many years ago in a cave near Islamabad:

"God sent Buddha into the world to instruct and direct the steps of men. His birth and origin are set forth as follows. When Buddha descended from the region of souls he entered the body of Mahamaya, who in due course solicited from her husband permission to visit the Rajah, her father. That she might do so the roads were repaired and made fit for her journey. Fruit trees were planted, water vessels placed by the wayside, and great illuminations prepared for the occasion. Mahamaya then commenced her journey, and having reached a garden which opened on to the road, felt a desire to walk there and gather flowers. Her time having now arrived she laid hold on the trees for support. These, in response to her need, inclined their boughs and so concealed her person." The legend is an early one, and shows that at the time when it originated gardens were under cultivation, and were looked upon as suitable places for privacy as well as for pleasure.

We find among the representations of the divinities many illustrations of our subject. Garlands of flowers, many-coloured and carefully arranged, were placed on their heads or necks, frequently hanging below their waists. Their robes are often embroidered with representations of different kinds of blossoms, and they were painted or carved with a Lotus in one hand, or emerging from the blossom on which they were at times shown to be enthroned. Many plants were looked upon as sacred, and were regarded as peculiarly suited for use in religious worship, processions, and festivities. These were often characterised by the splendour of their blossoms, their fragrance or their rarity, and from their study we learn something of the devotion of the people, and the sacrifices they were prepared to make in order to please their gods or secure their favour and blessing. So vast is the number of flowers and plants alluded to by the early Hindu writers that it will be necessary to devote a chapter to their consideration. *Hilderic Friend*.

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

EUCRYPHIA cordifolia puts on its quiet splendour in mid-September, having begun its display just as *E. pinnatifolia* was passing out of bloom. It would be hard to say which is the more beautiful of these two Chilean shrubs; where climate and soil are suitable, the wise thing to do is to grow both. The evergreen *E. cordifolia* demands a moist, mild climate; probably it will thrive wherever *Fuchsia globosa*, *F. corallina* and *F. Riccartonii* (I can never distinguish between them) flourish. Five-and-twenty years ago it was hard to come by, my first plant having been brought here by a kind friend from Louis Chenault's nursery at Orleans; but the species is easily raised from seed or cuttings (one plant here has sent up suckers), and several nursery firms have it in stock now. The finest specimen of *E. cordifolia* known to me grows in a sheltered glade in Lord Stair's grounds at Castle Kennedy, a shapely column of dark verdure between twenty-five and thirty feet high, richly decked at this season with snow-white, chocolate-centred blossoms. The grand plant at Nymans may be taller by this time; it is several years since I saw and admired it. *E. pinnatifolia* is hardier than the other, requiring only good forest soil free from lime, and shelter from cutting winds. It is reckoned evergreen in Chile; but although young plants retain their foliage through our winters they become deciduous before reaching the flowering stage. It comes as readily from seed as the other; but it is exasperating, after waiting several years for the young plants to flower, that several of them produce double flowers utterly lacking in the delicate grace of the normal blossom. I have not seen the hybrid between these two species, lately exhibited at a R.H.S. show. By all accounts it is a highly desirable plant.

* Previous articles on "The Garden in Antiquity" by the Rev. Hilderic Friend appeared in our issues for February 7; February 21; March 14; April 11; April 25; May 30; June 20; July 16; August 8; August 22; and September 12, 1925.

The third species—*Eucryphia Billardieri* from Tasmania—has not yet flowered here; but I saw it flowering at Rostrevor last year, a pretty thing, but far from equal in beauty to its Chilean congeners. By the by, has it been finally decided to what Natural Order *Eucryphia* belongs? In his indispensable book Mr. Bean pronounces its true affinity to be doubtful, and assigns it an Order of its own—*Eucryphiaceae*; but in the new edition of the *Kew Hand List* it is given a place in the *Rosaceae*.

The shrubby St. John's Worts make a brave display at this season. It must be fifty years or thereby since I came upon a stray plant of *Hypericum Hookerianum* among some Gooseberry bushes in Cunninghame and Fraser's Comely Bank nursery. I pounced upon it at once and we have never been without plenty of it ever since. I always esteemed it the finest

that its other parent—*H. calycinum*—finches not though the mercury should fall to zero. *H. Forrestii*, recently introduced from China, is not yet of a stature here to display its full character; the flowers closely resemble those of *H. Hookerianum*.

Among the dwarf St. John's Worts, *H. reptans* (not to be confused with the inferior *H. repens*) forms charming drapery on a steep retaining wall, though it is apt to be marred by mice or voles which, esteeming it choice in winter, gnaw through the stems. *H. Coris* and *H. fragile* are very desirable rock plants, but the latter has to be kept under surveillance; not content with spreading into broad masses, it distributes its seeds so lavishly as to endanger less vigorous neighbours.

If the common crimson *Fuchsia* referred to above were novel or rare what glowing epithets

THE USE AND ABUSE OF LAURELS.

Few plants are so misused or treated so badly as the long suffering member of the Cherry family, *Prunus Laurocerasus*, commonly known as the Cherry Laurel, and yet it is a species, with a number of varieties, that may be used to good effect if properly dealt with. It is hopelessly out of place, for instance, in a small suburban garden, where limit of space demands severe pruning, but in a big shrubbery where little pruning is necessary, one or other of the varieties may be grown as specimen bushes.

Another misuse of this plant is its employment for the formation of hedges alongside road boundaries around a garden. It is a fairly cheerful-looking, large-leaved evergreen, which attains a good height, and being bushy in

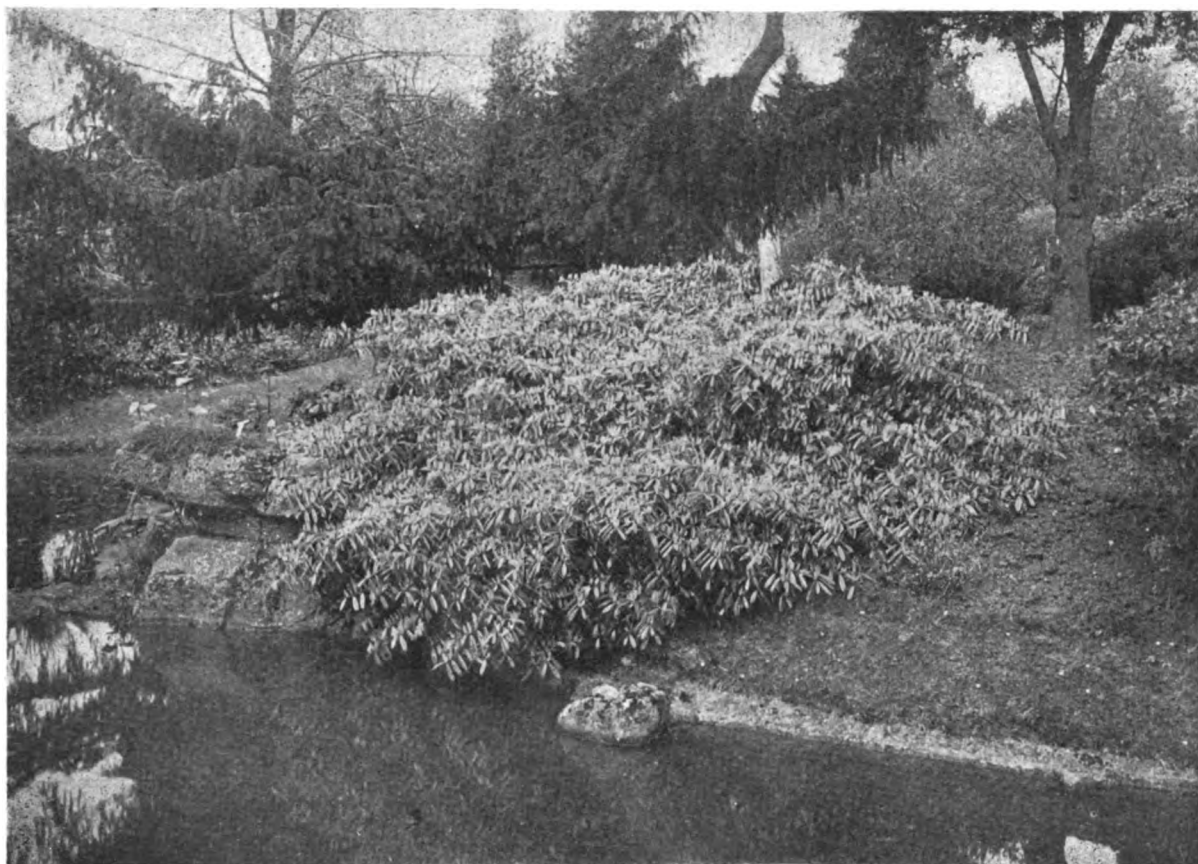


FIG. 101.—*PRUNUS LAUROCERASUS ZABELIANA* GROWING IN ALDENHAM HOUSE GARDENS

(see p. 252).

of the shrubby species, until a couple of self-sown seedlings presented themselves in a neglected corner. These are now seven feet high, laden with golden bloom in quality equal to *H. Hookerianum*, in profusion rivaling *H. patulum*, which are probably their parents.

The variety of *H. patulum* named after my old friend Dr. Augustine Henry, surpasses the type in richness of colour; but its flowers are all shed by mid-August, whereas the older form maintains a bright display till stopped by November frost. *H. patulum* has been described as a dwarf shrub; but within twenty yards of where I sit there is a specimen six feet high and thirty-six feet in circumference. Would that its hybrid offspring *H. Moserianum* attained similar dimensions, for its flowers are larger and more brightly coloured; but it is a disappointing subject, constantly out back to the ground in winter. It is strange that it should be so tender, seeing

we should lavish upon it. The past hot summer has stimulated the bushes to even greater profusion than usual; they glow with special splendour in the autumn sunshine. Experience has made me shy of pronouncing any plant to be rabbit-proof, but I have never known this *Fuchsia* to be injured by ground game. It springs thickly from self-sown seeds in both garden and woodland. Moreover, it is a long-lived shrub; I have known one specimen from early childhood, and it is still perfectly vigorous.

Among herbaceous plants now in flower, *Houttuynia cordata* is worthy of note for rock-work or the front of a border. It belongs to the *Piperaceae* or Pepper Order, beginning to flower rather late in summer, it continues well into autumn to open its quaint blossoms, consisting of a compact spike of florets without perianth, set between four white, rather fleshy bracts, well shown up by the bronzy-purple, heart-shaped leaves. *Herbert Marshall, Monreith.*

its young and vigorous days, it makes a useful screening hedge. But the awakening comes later, for the Laurel is a voracious feeder, and soon exhausts its food supplies, grows straggly, and becomes an eye-sore rather than a delight, as well as failing as a hedge or protective fence. If the Laurel must be used a hedge plant, then it should be fed repeatedly, trimmed properly, and have the soil around its roots kept in an open and clean state. If, despite good treatment or owing to lack of attention, it becomes leggy and ragged, then the proper method is to cut it back to the ground level, as young growths will then spring up to replace those removed. This operation should be carried out in spring. I doubt though, if Laurel ever really makes a successful defensive hedge, such as other evergreen subjects, for instance, Holly, will.

For the formation of banks or slopes, or flanking walks, where breadth of planting is permissible, there is a different story to tell, for a well-kept breadth of Laurels not permitted

to get too high, will form a most picturesque feature of gardening design, provided proper trimming is given.

Some explanation is necessary in regard to trimming. It is a sad sight to see Cherry Laurels that have been carelessly trimmed with the garden shears. The trimming should be carried out far more carefully than this; growth and leaves should be removed by the aid of secateurs and not left in a mutilated condition on the plant.

As specimen plants in the shrubberies, there are one or two varieties of the Cherry Laurel of special value. *Prunus Laurocerasus camelliaefolia*, not admired by all, has curiously curled and twisted leaves, the under surface appearing in contrast with the darker upper surface, and thus presenting a rather chequered appearance. It is a strong-growing subject of neat habit, and appreciates attention in the matter of feeding when this is required as a result of soil impoverishment.

A charming dwarf form which seldom reaches three feet in height is *P. L. parvifolia*, the leaves of which average about two inches in length by half-an-inch in width; some of the smaller leaves, in fact, are only a quarter-of-an-inch wide.

In contrast with this is the giant of the race *P. L. magnoliaefolia* (Fig. 100), with its handsome leaves a foot in length by about four inches in width. When properly trained, this makes a handsome small tree. Another variety of note is *P. L. Zabeliana*, a form with low-growing, very spreading habit, and which will grow into a fine specimen for the front of a shrubbery, where it has ample room, or it will make a splendid plant isolated on a fairly steep bank. Its foliage is long and narrow. The illustration (Fig. 101) of one of our plants at Aldenham depicts a specimen only five feet in height, but which has a spread of no less than twenty-five feet. *E. Beckett, Aldenham Gardens.*

PUBLIC PARKS AND GARDENS.

BRADFORD Corporation proposes to undertake various works in the Bradford public parks during the coming winter in order to provide labour for the unemployed. The programme includes two new bowling greens and four hard tennis courts at Harold Park, at a cost of £2,477; levelling and formation of walks in the Emsley Memorial Recreation Ground, at £1,000; levelling and construction of new walks and bowling green in Knowles Lane Recreation Ground at £1,200; paddling bays in Heaton Woods, £434; and hard tennis courts in Peel Park, Bradford Moor Park, and Bowling Park, costing £1,250.

SWANSEA Corporation has decided to purchase part of Ravenhill, Fforestfach, for a recreation ground.

THE Corporation of Salford proposes to carry out improvements in the Ordsall Park Recreation Ground. The proposals provide for an open-air swimming bath, paddling pool, sand pit, and an extensive grass plot for children. It is also proposed to reconstruct the derelict gymnasium and to lay out extra tennis courts.

VISITORS to the National Rose Society's autumn exhibition who entered Regent's Park by the Portland Road entrance were delighted with the magnificent display of Dahlias at the end of the flower garden nearest to the Marylebone Road. All types of the flower are represented and whilst they are planted indiscriminately—Cactus, Decorative, Paeony-flowered and other kinds being associated together—the effect is very grand. The site chosen for the planting is especially appropriate as those at the back row are on higher ground than those in front, so that a great bank of brilliantly coloured flowers is presented to the view. The introduction of Dahlias to Regent's Park has proved one of the greatest attractions, and each day visitors may be seen making notes of the merits of the respective varieties, all of which are prominently labelled.

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Self-sterility in May Duke Cherry.—I rather echo the doubt suggested by Mr. Heaton (*see p. 175*). May Duke Cherry is given as self-sterile by experimenters, but I remember two small lots in market gardens near here which cropped quite well, and I do not believe there was any other Cherry within miles of them, certainly none near enough to effect pollination. *Chas. E. Pearson, Loundham, Notts.*

A Rose Sport.—Recently, while searching the registers of Alrewas—a small town in the county of Stafford, lying between Lichfield and Burton, I found the following entry under the year 1644:—"O Lord, Thou showest Thy miracles in all ages! Witness in my garden at the Vicarage grew two white Roses and no more upon a damaske Rose tree, being neither grafted nor any other art used but coming naturally from the root, yet those two Roses as white as milke, now growing, June 28th." The writer was the Vicar, Richard Martin, appointed in 1637, and he held the post until 1646. There were no further horticultural entries in the registers. *E. C. Middleton, Streetly.*

Missing Butterflies.—What has become of the beautiful Admiral and Peacock Butterflies this season? For several years past the opening of the heavily scented flowers of the Buddleias has been the signal for their arrival, and usually they stay until the blooming season is over; and on a bright sunny afternoon they and the sober-hued spikes make a very gay show. As a result, I have repeatedly urged my friends and neighbours to plant Buddleias, and the Butterflies will arrive in due course. Thus far, not one has put in an appearance although it is two months since the flowers of *B. nanhoensis* first opened, and a few are making a brave attempt to do so despite the wintry spell. In addition, since the beginning of August, *B. variabilis* has put forth some of the most magnificent spikes I have ever seen, but the only butterflies to visit them are of the voracious Cabbage variety with whose services I can very well dispense. Have any other of your readers had a similar experience? *S. B. Dicks.*

Tomatos in the Paris Market.—It is not in my power to speak of the sale of Tomatos in French markets in recent years, but in the late '80's they were conspicuous by their absence alone. I was then living in the Latin quarter and took my meals in the luxurious (?) restaurants which dispensed 11 a.m. *dejeuner* (call it lunch) of three courses, plus wine, for half-a-franc, but while the salads were most varied and delicious, Tomato was never present in them, so far as my memory serves. In the old markets, for which the City was then most justly famous, and where it was generally assumed that everything from the garden found its way before it came to be distributed by the several means employed, these fruit-vegetables were rarely seen. This surprised me, and I venture to think, quite naturally; I expected that they would be in bulk not simply because of the ease with which many districts will produce them, but because of their effectiveness in mixed salads. It was not long prior to this date that they gained such popularity in this country; it may well be that the prejudice here was equally a prejudice, there, and it is possible that it lasted for somewhat longer, in which event the date named would not have seen it clear of the clouds. *W.T.*

Edinburgh International Show.—I visited the Royal Caledonian International Flower Show at Edinburgh, which, as your report states, was a good show. But why international? So far as I could discover the English and Irish firms were placed at the sides of the hall and the Scotch firms in the more prominent positions in the centre. The Floral Committee also gave seven Awards of Merit to Scotch Novelties, but not a solitary one to English and Irish firms! *An English Gardener.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. (111-116).

(Continued from p. 235.)

ENGLAND, SOUTH.

SUSSEX.—Strawberries were a good crop, and we had Raspberries, Currants and Gooseberries in abundance. Plums on walls were very thin. I think this is owing to unfavourable weather during the setting time, for it was cold and wet. Standards of River's Early, Czar, Belgian Purple, Prince Englebert, Victoria, Monarch and Orleans have average crops. Damsons were a good crop, and Langley Bullace fair. Sweet Cherries were an average yield, but Morello Cherries were very scarce. Pears are very few. Of Apples some standards have very heavy crops. Nancy Jackson, Herefordshire Beaufin, Lord Derby and Bramley's Seedling, and of bush trees The Rev. Wilks and Mr. S. T. Wright are very heavily cropped. Royal Jubilee, Lane's Prince Albert, Crawley Beauty, American Mother, Rival, Charles Ross, Egremont Russet, and Cox's Orange Pippin are all carrying very good crops. *E. Neal, Tilgate Gardens, Crawley.*

WILTSHIRE.—All fruit trees, with the exception of Pears flowered well, but the fruits generally failed to set, the crops being very patchy. Bush fruits were plentiful and Strawberries fair, but the season for this fruit was short. Plums and Cherries on walls were good, and most sorts of Apples look well. *H. H. Mills, Fonthill House Gardens, Tisbury.*

—Apples are an average crop, Pears are very scarce. Plum trees blossomed profusely, but the promise of an abundant crop has not been fulfilled, apparently due to the dry season and attacks of insect pests. Cherries were plentiful. Strawberries set well but the drought prevented the berries swelling to the usual size; Givon's Late Prolific withstood the dry season the best and finished some good berries. Raspberries were excellent, as also were Red Currants and Loganberries. Black Currants were not so good as usual. Peaches and Nectarines were scarce. Gooseberries were abundant, and the berries very fine. Insect pests were very troublesome during the hot weather in June, and it was impossible to cope with them. *J. Vandell, The Manor Gardens, Ramsbury.*

ENGLAND, N.W.

CUMBERLAND.—The fruit crops are a failure. Among small fruits Red Currants alone made anything of a show. Fruit trees flowered profusely, and an absence of frost during the flowering period made one look forward with some hope for at least average crops, but very cold winds and almost incessant rains are held responsible for the failure. James Grieve, among Apples, stands out here as a reliable and continuous bearer. The soil is a fairly heavy loam. *J. Service, Holme Hill Gardens, Dalton, Carlisle.*

WESTMORELAND.—There was a good show of blossom on all fruit trees and bushes in the spring. Apples looked very promising, but owing to late frosts we have only a very moderate crop. Pears, Plums and Cherries suffered likewise. Small fruits were all average crops. Black Currants and Strawberries were of very good quality considering the very dry weather of early summer. *Robert Daere, Underley Gardens, Kirkby Lonsdale.*

—Bush fruits were all excellent crops, and Strawberries yielded plentifully and the berries were of excellent quality, but the fruiting period was shortened owing to drought. Plums promised well but, unfortunately, frost occurred when these trees were in flower. The Pear crop was also ruined by frost, when the trees were in bloom. All orchard fruit trees are looking extremely well, and the foliage is free from pests. *James Jeffrey, Lowther Castle Gardens, Penrith.*

(To be continued.)

VEGETABLE GARDEN.

THE DANDELION.

(*TARAXACUM OFFICINALE*).

THE idea that the Dandelion is nothing but a pestiferous weed with a very pretty flower is so commonly entertained that it hardly seems proper to include it in the vegetable garden; but if a careful study is made of its properties and uses it will be found to serve some good purpose in the great creative scheme, and that in all its parts it is, if properly treated, a healthful food or a healing medicine.

It is somewhat singular that Miller, who was described by Justice as "the worthy and ingenious Curator of the Chelsea Physick Garden," should write of the Dandelion in such a severe fashion as the following extract from his *Dictionary* will show. Article, *Leontodon*:—"There are four or five species of this genus which grow naturally in the fields . . . some people in the spring gather the roots and blanch them in their gardens for a salad herb. I shall forbear saying anything more of them than that they are *very bad weeds* in gardens and fields so should be routed out before the seeds are ripe." Miller does not give the names of any of the species suggested by him, although they were available in his day, three species having been illustrated and described by Dodoen's two hundred years before. The foregoing are named in Dodoen's *Herbal* as follows:—*Papencruyt* or *Canckerbloemen* No. 1. The illustration shows a plant, of good, ordinary cultivated, growing in a tuft and with a single tap root. This *Theophrastus* named in his *Seventh Book*, *Cichoric* or *Cichore*; the Latin name is *Dens-Leonis*. No. 2. has upright leaves which are not so much toothed as No. 1, and has a cluster of short fleshy roots.

This was named by *Matthiolus*, *Cicoreye* van *Constantinople*, and by *Lobel*, *Dens Leonis Montpellensium*; to which of these two cities it rightly belongs the writer is not prepared to say; doubtless both could substantiate their claim to it. No. 3 is a branching plant somewhat like an annual *Chrysanthemum*, and this is simply named *Dens Leonis tertia* species.

Dodoen's refers to cultivated Dandelion in his descriptions, which is proof that its culture was understood and practised in his day. Its uses were the same then as now.

Later authors, including *Linnaeus* and *Miller* quote the plant as *Leontoeum taraxacum*. *Don*, copied *Linnaeus*, and *The Vegetable Garden* (*Vilmorin*) does the same.

Don's Hortus cantabrigiensis, 1796 quotes as follows:—

1. *Leontodon Taraxacum*. Common. Britain.
2. *Leontodon lividus palustris*. Marsh. Britain.
3. *Leontodon obovatus*, broad-leaved. Spain.
4. *Leontodon serotinus*, late. Hungary.

Nos. 1 and 2 are figured in *Smith's English Botany*; No. 3 resembles the No. 2 of Dodoen's noted above. It is to French sources that we must look for the fullest and latest information respecting the *Dent-de-Lion*. *The Vegetable Garden* (*Vilmorin*) describes the following:—

- 1.—*Thick-leaved or Cabbaging*. A very distinct variety which surpasses the wild plant in the very great number of its leaves. It blanches very easily and appears to be the best variety yet obtained. No. 2 *Moss-Leaved*. The blade of the leaf is divided into narrow strips much like the *Staghorn Endive*. The leafage is very dense and easily blanched.
- 3.—*Improved Very Early*. A broader-leaved form of the very common; very early. This closely resembles Dodoen's No. 1. No. 4. *Large Green Montmagny*. Very largely grown round Paris. A more vigorous form of the common which has been obtained by cultivation.
- No. 5.—*Improved Giant Erect*. A distinct, broad-leaved, upright growing, thickly set tuft, with leaves long, stout, toothed and slightly brown. It is early, vigorous, and more prolific than most of the other Dandelions. This resembles the No. 2 of Dodoen's, which according to *Matthew Lobel* is the *Dens Leonis Montpellien-*

sium, e.g., *Dandelion of Montpellier*, noted above.

Complaint is sometimes made of the high prices charged by seedsmen for seed of the named varieties of Dandelion but those who complain do not know the difficulties and expenses connected with its culture. In his catalogue for 1924, *Mons. L. Clause*, *Bretigny-sur-Orge*, devotes a full page to this subject. One half of the page contains a reproduced photograph of a large field of the Cabbaging variety in which women are seen picking the seed (see Fig. 102). Respecting this work *M. Clause* observes:—"With a fine time when the crop has arrived at maturity the fruit of the Dandelion is the sport of the wind, which the lightest breeze will detach from the flower. It is also necessary to follow most carefully the variations of temperature and to collect the heads one by one at the precise moment when they are ready, or the seeds are liable, if out of condition, to stick to the receptacles. Further, the birds are great lovers of the Dandelion seed and cause serious damage to the crops as for several weeks before

HARDY FRUIT GARDEN.

GREASE-BANDING FRUIT TREES.

THIS important operation should be performed not later than the middle of October.

By keeping the grease bands in a tacky condition until April many fruit tree pests, including the *Codlin Moth*, may be reduced to a minimum. Grease-banding is far more efficacious than spraying, as the pests secrete themselves so deeply in the crevices of the bark, etc., that the spray fluid fails to reach them.

The outfit required in grease-banding is of small outlay: a ball of stout twine, a roll of grease-proof paper, a small paint brush and a tin of grease, of which *McDouglas "Ostico"* is one of the best, completes the requirements. Cut the paper into strips five inches in width, and sufficiently long to go around the trunk of the tree at the base of the branches; if the tree is supported by a stake this should also be banded, or the pests will get to the branches



FIG. 102. A FIELD OF CULTIVATED DANDELIONS.

the crop is ready and during the whole time of its harvesting, which, with interruption for at least one month, the guardians have to be on the move all over the fields from daybreak." And, it may be added, all this has to be paid for.

From the foregoing it will be seen that practically every part of this despised plant can be made of some use. The leaves, especially when carefully blanched, make a very acceptable salad which can be had at a time when other salad plants are not available; the roots, nicely boiled, when fresh, make an excellent and appetising tea; and when dried, roasted and ground, like ordinary coffee, furnish the Dandelion coffee which is such a boon to dyspeptics; the fresh flowers make a very pleasant wine, a veritable cordial for the disordered liver; the dried seeds make an excellent food for cage birds, and in the collection of the same helps to swell the slender purse in many a cottage home; and the hollow flower stems are easily made into trumpets which delight juvenile rustics and their friends (?). A considerable business is done in some of the articles named which in their production and distribution furnish honest and profitable employment both for capital and labour. *S. B. Dicks.*

by that means. The paper should be secured by two ties, one near the upper edge with the end extended to one of the lower branches to prevent slipping, and the other near the lower edge of the paper.

The latter should be so secured that it is impossible for the insects to crawl under it, and it should be thoroughly smeared with suitable grease.

It pays to visit each tree weekly to see that the papers are being kept in place and also in a sticky condition, as it is quite possible for the insects to walk across on the dead bodies of their comrades; the weather also has an influence on the grease, as bands low down the stem soon get splashed with soil and rendered quite smooth.

The *Winter Moth* (*Cheimatobia brunata*) is capable of laying four hundred eggs between October and January, and they hatch just as the young leaves are unfolding, on which the larvae commences to feed at once. They also attack the fruits directly they form, causing them to fall prematurely. With the return of summer weather they multiply so quickly, that in a remarkably short space of time the tree is completely covered. *W. Miller.*

ROYAL HORTICULTURAL SOCIETY.

EXHIBITION AT HOLLAND PARK HALL.

September 22, 23, and 24.

THE Royal Horticultural Society's great autumn exhibition held in the Holland Park Hall on the above dates was one of the best ever held there. There was more colour than usual, contributed chiefly by the masses of Dahlias and Chrysanthemums, assisted by Gladioli, Orchids, Carnations and the brighter late-autumn flowers. Autumnal colour as represented by the rich hues of the foliage of deciduous trees and shrubs was almost conspicuous by its absence. It was unfortunate that so much of the floral colour was disposed towards the ends and sides of the hall, because the spectacular effect would have been greatly enhanced—especially as viewed from the gallery—if some brighter exhibits had been arranged immediately around Mr. Macdonald's central Grass and Heath Garden.

The disposition of the fruit exhibits in the gallery did not meet with the approval of the pomologists, and we believe certain growers declined to exhibit when they were informed that only space in the gallery was available.

There were few outstanding novelties, the most notable being *Beaufortia decussata* and *Melicytus ramiflorus*, from Cornwall, while the most distinct and novel group in the hall was the one of South African succulent and other plants arranged by Mr. Frith of the South African Railways Staff.

The weather was unkind on the opening day but there was a good attendance, nevertheless.

Orchid Committee.

Present: Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. G. Thwaites, Mr. Frederick J. Hanbury, Mr. H. S. Pitt, Mr. John C. Cowan, Mr. Fred K. Sander, Mr. Stuart H. Low, Mr. H. G. Alexander, Mr. T. Armstrong, Mr. S. W. Flory, Mr. J. G. Shill, Mr. Charles H. Curtis and Mr. A. McBean.

AWARDS OF MERIT.

Laelio-Cattleya Profusion var. *Adriatic* (L.-C. Serbia x C. *Hardyana*). A finely-grown plant of this variety was shown carrying a spike of four large flowers. The broad petals and sepals are light rosy mauve and the lip is of brighter colour with bright purple apex and cream-coloured blotches near the throat. Around the deep purple area is a wire edge of mauve. Shown by Messrs. J. AND A. McBEAN, Cooks-bridge.

Cattleya amabilis alba, Low's var. (*labiata* x *gigas*). A lovely Orchid with three fine blooms on its stout spike. The sepals and petals and the base and margin of the lip are pure white, while the front of the lip is light, bright purple with a few lighter mottlings. Shown by Messrs. STUART, LOW AND CO.

Cattleya Tagus var. *King George* (*Rhoda Langley* var. *King George*). A handsome and finely formed flower, with citron-yellow sepals and petals and a showy crimson lip veined with old gold and edged with rosy mauve. Shown by Messrs. BLACK AND FLORY, Langley.

Cattleya Mimosa var. *superba* (*Venus* x *triumphans*). This beautiful Orchid was one of the most effective on view. It has broad, light golden-yellow sepals, and less broad but equally attractive petals. The fine lip is crimson-purple shading to orange at the base where there are radiating old gold veins. Shown by Messrs. J. COWAN AND CO., Southgate.

LADY ABERCONWAY and the Hon. H. D. McLAREN (gr. Mr. Puddle), showed a fine plant

of *Cypripedium Fairrieanum* carrying a couple of bright-coloured flowers. This species is difficult to cultivate, but the specimen shown had seven or eight good growths and has been in cultivation at Bodnant for five years.

GROUPS.

The largest display of Orchids was made by Messrs. STUART LOW AND CO., who had a very pleasing exhibit situated in a rather dark position. All the plants were well-arranged each one separated from its neighbour by Ferns and dwarf foliage plants, while all the pots were hidden by moss. *Laelio-Cattleya* figured largely in their group, demonstrating the value of these for autumn decoration, as well as the successful art of the hybridist. A dozen fine plants of L.-C. *Soulangue* made a bright central feature, while isolated specimens of L.-C. *Profusion*, with creamy blotches on the purple lips, were conspicuously good. Of lovely colouring was *Brasso-Laelio-Cattleya* *Blenheim Orange*, brilliant in orange and golden orange; while B.-L.-C. *Baroness*, lemon-yellow and gold, and B.-L.-C. *Miss Eileen Low*, with enormous intense, violet-purple lips, were delightful. Other fine things included *Cattleya Hardyana*, C. *Gaskelliana alba*, C. *Kienastiana*, *Odontoglossum Uro-Skinneri alba*, *Cypripedium Godefroyae*, C. *Boltonii*, the rare *Cymbidium erythrostylum*, and arching spikes of *Oncidium*s and hybrid *Odontoglossum*s.

Messrs. BLACK AND FLORY contributed a very bright group of Orchids (Fig. 103) which would have been improved had the back plants been raised a little higher. The bright colouring of the flowers was especially noteworthy and a fine feature in the dull building. *Cattleya Tagus* var. *King George* (*Rhoda Langley* var. *King George*) has a very shapely citron yellow flower with intense, deep crimson purple lip; C. *Lysander*, resplendent in gold and orange; C. *Aeneas*, deep old gold with orange and crimson lip; C. *Hardyana* and C. H. *alba* were all very handsome. *Cirrhopetalum Rothschildianum* was represented by two specimens, each with three of its quaint crimson, cream-speckled flowers. Other fine subjects were *Brasso-Cattleya* *Ilene*, B.-C. *Dietrichiana*, L.-C. *Carnenecita*, and the handsome, large-flowered L.-C. *Warrior*.

Messrs. COWAN AND CO. set up a charming group and displayed their plants in excellent fashion. *Cattleya Hardyana* was finely represented and showed the variation of this beautiful hybrid. *Laelio-Cattleya* *Queen Mary* carried four splendid mauve and purple flowers; L.-C. *Hassalii alba* and the broad petalled, white *Cattleya Vesta* attracted general attention and admiration. The spike of *Odontodia Laura* gave a splash of blood-red, while in the front line was the contrasting, chaste, *Coelogyne Mooreana* with a spike of five flowers. *Mil-tonia Angela*, with its crimson, butterfly-like mask, and several excellent *Cypripedium*s were also included in this interesting display.

Floral Committee.

A Section.—*Present*: Mr. H. B. May (in the chair), Mr. Arthur Turner, Mr. D. B. Crane, Mr. J. B. Riding, Mr. G. W. Leak, Mr. H. R. Darlington, Mr. G. R. Janes, Mr. D. Ingamells, Mr. J. M. Bridgeford, Mr. M. C. Allwood, Mr. W. H. Page, Mr. W. B. Gingell, Mr. F. G. Cousins, and Mr. F. Streeter.

Section B.—*Present*: Mr. Charles T. Musgrave (in the chair), Sir Wm. Lawrence, Mr. W. J. Bean, Mr. James Hudson, Mr. G. W. Loder, Mr. G. Reuthe, Mr. C. Williams, Mr. R. C. Notcutt

Mr. E. H. Wilding, Mr. T. Hay, Mr. F. G. Preston, Mr. G. Yeld, Mr. E. A. Bowles, Mr. G. Harrow, and Mr. Reginald Cory.

AWARDS OF MERIT.

Melicytus ramiflorus.—Cheeseman, in his *Illustrations of the New Zealand Flora*, states that *Melicytus ramiflorus* was one of the first New Zealand plants to become known to Europeans, for it was among those gathered by Sir Joseph Banks and Dr. Solander when Cook first landed in October, 1769, not far from the site of the present town of Gisborne. The Maori name for this species is The Mahoe. The small flowers are not only borne along the leafless lower part of the branches, but further along also, on the leafy portion. But the beauty of this shrub lies in its fruits which are small, roundish and blue, and produced closely together in large numbers. The bright green leaves are glossy and together with the abundant fruits are very effective. The specimens exhibited were very attractive. In Cornwall this member of the order *Violarieae* is hardy, and we understand it may grow so tall as twenty-four feet. Shown by Rev. A. T. BOSCAWEN.

Beaufortia decussata.—Everyone will agree with the observation that "*Beaufortia decussata* when covered with blossoms, is a splendid shrub" but those who saw the flowering growths exhibited at Holland Park Hall, and have also seen the illustration in *Bot. Mag.*, t. 1733, will also agree that the illustration falls far short of the reality in the colour of the flowers. B. *decussata* is a native of the south-west coast of New Holland, where it was discovered by Robert Brown, Esq. The light yellowish-orange flowers are borne in clusters, in bottle-brush style, and they are very beautiful, with an accompaniment of small light green leaves which do not obtrude upon the flowers, notwithstanding that new branches appear beyond the inflorescence. The flowers shown were produced in the open in Cornwall on a bush six feet high. Shown by Rev. A. T. BOSCAWEN, Ludgvan Rectory, Cornwall.

Veronica Armstrongii.—This interesting, shrubby *Veronica* was described and figured in *The Gardeners' Chronicle* of August 12, 1899. It is a handsome low-growing, much-branched species, admirably suitable for cultivation in the rock garden. The tiny leaves are closely adpressed to the stem, and those on the newer growths are bright green. Shown by Mr. AMOS PERRY, Enfield.

Schizandra rubriflora.—A shrubby plant belonging to the *Magnolia* Order. It is a native of Western Szechuan where it was found by Mr. E. H. Wilson in May, June and September, 1908, and again in the autumn of 1910. The ovate, laceolate leaves, three inches long, have serrated margins, and at this season of the year are of a brownish green colour. The striking feature of the plant is its pendant, elongated clusters of round, pea-sized, coral-coloured fruits. Each cluster is about three inches long, and is suspended on a three-inch stem, and depends from the underside of the branch. The species is of scant habit. Shown by the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree.

Pentas parviflora.—The genus to which this plant belongs is best represented in gardens by *Pentas carnea*. In *P. parviflora* the flowers are orange-red and borne in close heads. Shown by W. VAN DE WEYER, Esq., Dorchester.

Chrysanthemum Mauford White.—A pure

white Japanese, early flowering variety that promises well as a useful market sort. Shown by Mr. H. SHOESMITH, Junr., Mayford, Woking.

Chrysanthemum Crimson Circle.—A fine, tall, crimson variety of Japanese form; early-flowering and with fine stems.

Chrysanthemum Fire Crest.—A Chestnut-coloured variety of fine form with golden reverse to the florets, this latter colour being conspicuous in the centre of the flower.

Chrysanthemum Pink Dame.—A bright pink variety of excellent form, with a silver-pink centre. These three varieties were shown by Mr. A. W. THORPE, Lichfield, Staffs.

Gloxinia Mauve Queen.—The finely-formed flowers of this variety are rosy-mauve, with a cream-coloured throat and soft, rosy-crimson shading at the mouth of the throat.

Gloxinia Beacon.—A gorgeous variety of rich crimson-scarlet colouring, the shade being even deeper in the throat than on the corolla lobes. Both these *Gloxinias* were shown by Messrs. SUTTON AND SONS.

Kniphofia H. G. Mills.—A noble *Kniphofia* with stems nearly four feet long and a spike eight to ten inches deep. The colour is soft clear scarlet. Shown by Messrs. BAKERS, Codsall.

Carnation Shot Silk.—In this showy, fringed-edged variety the colour is rich, deep, carmine, with scarlet flamings in some of the petals. Slightly fragrant. Shown by Messrs. ALLWOOD BROS., Haywards Heath.

Erica vagans var. *Mrs. D. E. Maxwell*.—The flowers of this variety are of deep pink colour. Shown by Messrs. MAXWELL AND BEALE, Broadstone.

STOVE AND GREENHOUSE PLANTS.

On a floor space a superb collection of *Codiaeums* (Crotons) was exhibited by A. P. BRANDT, Esq. (gr. Mr. J. W. Banks), Bletchingley, Surrey. Not only were the many plants models of cultural skill of the highest order, but great taste was displayed in the arrangement of the group, so that it ranked amongst the most successful exhibits in the hall. Of the many varieties so well shown *Pucinia*, *Aigburthiensis*, *Fred Sander*, *Mars. Reidii*, *Warrenii*, *Evansianus*, and *Sunstone* are only a small selection.

With a variety of *Lilium*, *Browallia speciosa* major, *Clerodendron fallax*, spikes of four varieties of *Gladioli*, small greenhouse Ferns, and boxes of fresh green seedling grass, Messrs. J. CARTER AND Co. made a most successful exhibit. The *Liliums* were *L. speciosum* *Melpomene* of considerable excellence. The *Clerodendrons* were magnificent specimens and the *Gladioli* were *Orchid*, *Pink Perfection*, *White Giant* and *War*. These in Messrs. CARTER'S skilful hands made a satisfying and memorable display.

An attractively arranged group of *Caladiums*, *Gloxinias*, *Streptocarpus*, and other glasshouse plants was contributed by Messrs. JOHN PEED AND SON. The *Caladiums* included excellent plants of *General Hamilton*, large crimson leaves; *Marie Moir*, and *Mrs. Robson*, delicate green and white leaves, and *Rio de Janeiro*, of elegant transparency. The many *Gloxinias* and *Streptocarpus* were equally well grown, and illustrated excellent strains of these valuable greenhouse plants. The general level of the group was nicely broken by various *Palms*, groups of *Liliums*, and specimen *Codiaeums*.

An enormous quantity of splendidly grown *Gloxinias* was shown by Messrs. SUTTON AND SONS. These were arranged in a large circle containing mounds of distinct colours radiating to and divided by other shades. The principal of the many excellent sorts were *Duchess of York*, rich purple with a white margin; *Duke of York*, bright red with distinct white margin; *Sutton's Purple*, of rich colouring; *Pink Beauty*, a delicately beautiful flower; *Monarch*, deep purple becoming paler at the margins; and *Sutton's Meteor*, a bright pink.

A large collection of their excellent double-flowered, tuberous-rooted *Begonias* was arranged by Messrs. BLACKMORE AND LANGDON. This included *Mrs. J. Davidson*, and *Sidney Robinson*, yellow; *Pavlova*, orange; *F. C. Calisthorpe*, scarlet; *Queen of the Belgians* and *Mrs. H. A. Fox*, pink; and *Mrs. F. Cairns*, picotee edged on white ground. The very many plants carried very large and shapely flowers, and the beauty of the exhibit was increased by the hanging baskets of *B. Lloydii*.

Excellent trusses of *Zonal Pelargoniums* were staged by Mr. R. J. CASE. His double and semi-double varieties included *Achievement*, *Barrone A. de Rothschild*, *Diales*, *Dogata*, *Fascinator*, *Lady Gertrude* and *The Speaker*, while a good selection of the singles included *Brightness*, *Exquisite*, *His Majesty*, *John Daniell*, *Jupiter*, *Mars*, *M. D. Lyon*, *Mrs. R. J. Case*, *Naples*, *Princess*, *Rose Queen* and *Uranus*.

Gasterias, the scented-leaved *Pelargoniums* *Richardias*, *Crinums* and a beautiful pink *Watsonia*, as yet unnamed.

A good collection of English-grown Cacti was staged by Mr. SYDNEY SMITH. These were well grown and attractively staged and included a *Mamillaria centricirra* seedling, *M. elongata*, various species of *Echinops*s, *Opuntia*, *Cotyledon*, *Sempevivum* and *Haworthia*. In front of his collection of *Dahlias* Mr. H. HEMSLEY had a long row of succulent plants, including *Haworthias*, *Sempervivums*, *Euphorbias* and *Saxifragas*.

FERNS AND GRASSES.

The only collection of hardy Ferns was arranged by Mr. AMOS PERRY, and this included good plants, chiefly varieties of *Athyrium*, *Polystichum* and *Scolopendrium*; these illustrated a great diversity of frond form and cresting.

Mr. JAMES MACDONALD presented a minia-

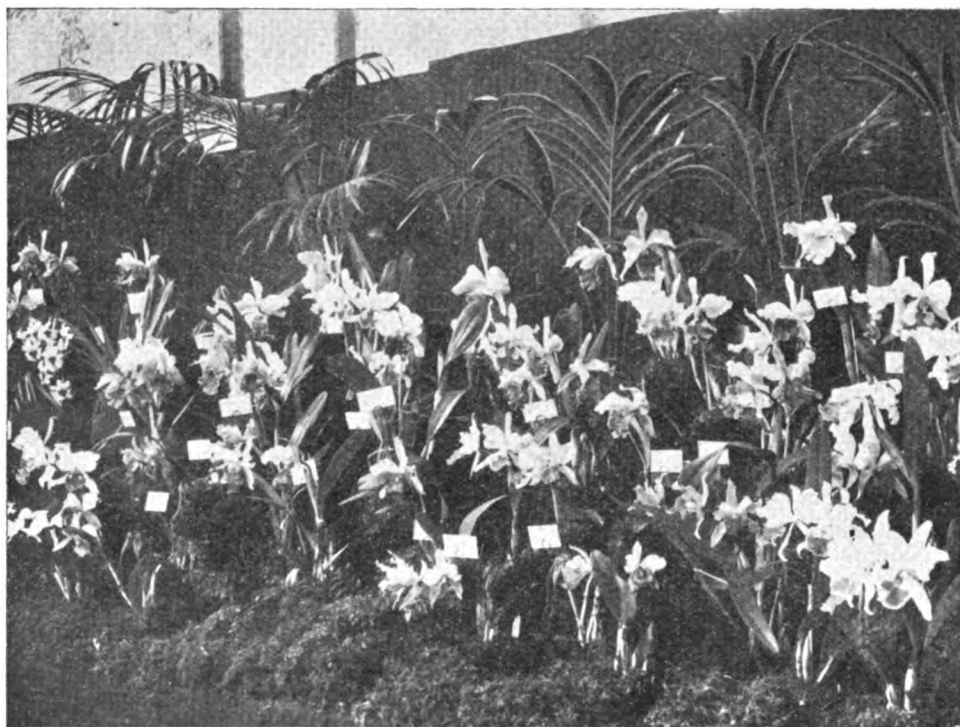


FIG. 103—PART OF MESSRS. BLACK AND FLORY'S EXHIBIT OF ORCHIDS AT HOLLAND PARK HALL. (see p. 254).

SUCCULENT PLANTS.

A particularly interesting collection of native succulents was contributed by the South African Railways and most successfully arranged in the form of miniature kopjes by Mr. FRANK FRITH, the Company's horticulturist, who has been responsible for the Colony's exhibition given at Wembley. In a comparatively small space great numbers of genera and species were represented. All the many plants were collected by Mr. FRITH in South Africa early this spring and brought over to Wembley, where they have been grown out-of-doors, which has given the plants a hardy and very natural appearance. Of the many different uncommon forms of plant life, the visitors seemed specially interested in *Mesembryanthemum Bolusi*, which has the appearance of large pebbles, and in *Euphorbia obesa*, a hard and almost round plant which, on the veldt, could easily be mistaken for a ball. Both of these plants, with *Trichocaulon flavum* and others, are valued by bushmen and travellers in arid parts for the moisture which may be extracted when the hard plants are crushed. Amongst the other interesting plants were *Eucuphalaris horridus* of a horrid prickly habit, *E. vallosa*, of Cycas-like appearance, *Haworthia chalumnae*, *Euphorbia chopela*, *E. fulvinata*, *Kleinia ficoides*, *Sarcocaulon rigidum*, various

ture lawn of faultless quality in which were arranged small beds filled with *Ericas*, *Berberis* associated with *Ericas* and other plants, *Azaleas* with coloured foliage, and suitable tall grasses waving above them with the air movement, and a pretty centrepiece as a sundial in the midst of golden *Pampas* grass. It was a delightful little exhibit and showed the possibility of beautifying a small area in a simple yet attractive manner.

CHRYSANTHEMUMS.

A particularly good collection of early flowering *Chrysanthemums* was set up by Mr. W. YANDELL, who had tall stands of *Crimson Pride*, *Sanctity*, white; *Harvester*, golden bronze; *Hesperus*; *Red Almirante*; *Salmon Profusion*; *September Glory*, deep golden; *Cranfordia*, large, rich yellow blooms, and *Nellie Blake*. Along the front of these excellent *Chrysanthemums* Mr. YANDELL placed pans of a fine selection of the *Violas* he grows equally well. Near the music gallery Messrs. KEITH LUXFORD AND Co. had a large collection of *Chrysanthemums* set up in elegant sprays. This highly decorative exhibit included the new, richly coloured *Phoenix*; *Verona*, of similar type, but rather lighter in colour; *Almirante*; *Miss Mattie*, rich yellow; *J. Bannister*, golden bronze; and *Chocolate Soldier*, a round, compact flower of dull brick.

red colour. A large collection, chiefly of dis-budded *Chrysanthemums*, was displayed by Mr. J. W. Forsyth for Messrs. PUTTERIDGE, LTD. The best of the well-grown varieties were Pink Delight, Almirante, September White, September Glory, Mrs. J. Mason, Claret, Countess, and Cream Delight.

GLADIOLI.

A considerable quantity of late-flowered Gladioli of great excellence was staged by various growers. Messrs. R. H. BATH, LTD., had a large collection of such sorts as Corry, a fascinating combination of lilac shades on cream ground; Rose Ash, a charming dull rose shaded variety; Galliene, Pink Perfection, Mrs. Frank Pendleton, shades of pink; and White Giant. A number of seedlings and Field Mouse, White Giant, Rarity and Electra, were staged by Messrs. LOWE AND GIBSON.

Particularly good spikes of Gladioli were set up by Messrs. AUSTIN AND McASLAN, and these included Rose Precoce, White City, My Favourite, America and Yellow Hammer. Red Canna was very prominent in the collection of Messrs. WILSON AND AGAR, who also had attractive spikes of Pink Perfection and Peace, with various Michaelmas Daisies, Pyrethrus and Lupins.

In a large and attractive group, arranged on a floor space, Messrs. BAKERS, LTD., displayed various standard varieties of Gladioli with Michaelmas Daisies, Rudbeckias, Sidalceas, herbaceous Phloxes, Kniphofias, and Geum Orangeman. THE ORPINGTON NURSERIES COMPANY showed Gladioli in considerable variety and these included particularly good spikes of Corry, Germa, yellow; Pink Perfection, Schwaber and Yellow Hammer.

A goodly collection of Gladioli in which the *Prinulinus* hybrids were prominent was exhibited by Mr. ALFRED EDWARDS.

DAHLIAS.

Messrs. CARTER PAGE AND Co. who have been exhibitors of these flowers at the R.H.S. Autumn Meetings for a great number of years, had, on this occasion, a representative collection of all types of Dahlias, in which big decorative sorts figured at the back, the rich crimson Glut having pride of place, and in front of this was the delicate shell-pink Mr. Dresselhuys. Another beautiful pink variety was shown in Emblem; of other colours were Nora Bell, scarlet, overlaid with purple; Psyche, yellow; Radium, Honesty, white with pink tinting; Border King, scarlet; White Star, and Romney, maroon.

Mr. J. B. RIDING showed some glorious Dahlias, grown and staged to perfection, the blending of the colours being in perfect accord. Of the many fine varieties we may instance Mrs. Chas. Salbach, Reginald Godfrey, Mariposa, Mrs. I. de Warner, Paul Michael, Elsa Willis, Glory, Gordon, and Anita. A beautiful Decorative Pompon was shown in Pride of Berlin, a variety of dwarf habit, free in flowering, the dainty blooms being soft lilac-pink.

A daintily arranged exhibit of Dahlias was contributed by Messrs. DICKSON AND ROBINSON. All sections of the flower were represented, notable varieties being Our Annie, Delice, Augustinus, Porthos, Dazzle, Defence, and Lucius, the last a large single of an elusive shade of bronze overlaid with orange—a most effective tint seen under artificial light.

Messrs. DOBBIE AND Co. filled a large table with Dahlias, this being a most superb collection of these autumn flowers in which all types were represented, the Paeony-flowered, Decorative and Collerette varieties being especially prominent. This method of staging in tall epergnes, with shorter vases and bowls interspersed, was most artistic. Outstanding varieties were Dunrobin, Linnet, Rona, Moray and Glen Etive, of the Collerettes; Our Annie, Dazzle, Joyce Healy, Doreen, Seafeld and Triton, Paeony-flowered; Sulphurea, Ben Lomond, Veruna, Queenie and Ben More, of the large-flowered varieties.

Messrs. JARMAN AND Co. used ornamental baskets along the front of their fine exhibit

of Dahlias, the back of which consisted of tall columns of blooms of such sorts as Bodeka, Emma Groot, Drcis Tisdale, King Harold, Mammoth and Rosie Supreme. Mr. H. C. Dresselhuys, Marie Purrier, Joyce Goddard and the mauve Jubilee were finely shown in the baskets.

Messrs. D. PRIOR AND SONS showed Dahlias of the different sections. The new Rosella Amos, a big decorative of old gold colour, is very effective and said to be very free blooming.

In Mr. C. TURNER's representative group of these flowers we noticed as specially good, the varieties Nancy, President Wilson, Flambeau, Glory of Nykerk, purple, and Trixie.

Mr. H. J. JONES had some uncommonly fine Dahlias next to his collection of Michaelmas Daisies. The mixing of two or sometimes more varieties was in good taste, such as Salaman and Netty; Mrs. J. H. van Tets and Mary Coppham; John King Smith and Cliche, and especially pleasing was a basket of the big white Menie Carlee and the tiny Jewly. The tall stands of big bloomed varieties at the back were very imposing in appearance.

Messrs. J. CHEAL AND SONS had several single Dahlias in their representative collection, also Pompon, Star, Collerette and Decorative varieties. The finest of the Star type, as exhibited, were White Star, Charlwood Star and Gatton Star. They included two novelties of the Mignon type in Julius, crimson, and Daffodil, yellow; the popular Coltness Gem is of this section.

Messrs. STREDWICK AND SON used many Cactus sorts in their exhibit, such as G. H. Barlow, Mrs. Walter Jackson, Mrs. C. A. Gillatt, Harry Strutt and Rev. H. C. Weaver. Of the big decorative type we admired Amen-Ra, Marie King, Mabel Lawrence and Sheila Ward. Mr. H. HEMSLEY had a number of pretty decorative varieties of a type specially suited for gardens. Mr. J. T. WEST showed, amongst other sorts, excellent vases of Lemur, Sea Fowl, Lucius, Snowdrift, Nelly and King-cup. Messrs. W. TRESEDER, LTD., made a bold group with Dahlias in variety, showing such sorts as Emblem, Topsy, Emma Groot and Miss Mallison.

ROSES.

THE collections of Roses shown by traders constituted one of the largest and best features of the Show. Most of the groups were staged on one side of the Hall and each grower was allotted the same amount of table space. There was great similarity in the method of displaying the blooms; the majority of exhibitors utilised columns of Roses as foils to the general collection staged in short receptacles such as vases and bowls, whilst some used fancy baskets.

The group of Roses shown by Mr. GEO. PRINCE was of outstanding quality and the inclusion of several fancy baskets, tastefully arranged with specimen blooms, left little to be desired from the artistic standpoint. Taller columns of such varieties as Sunstar, Climbing Mrs. H. Stevens, Mme. Butterfly and Mme. Ed. Herriot gave a bold effect and the front was prettily draped with Rose sprays.

Mr. THOMAS ROBINSON used even taller columns in his display, which embraced all the popular varieties. Here Mabel Morse was shown grandly, also Hortulanus Budde, Golden Emblem, Col. Oswald Fitzgerald, and Independence Day.

Messrs. CHAPLIN BROS., LTD., contributed many fine Roses arranged in the best exhibition style. In front was an arch of the beautiful Betty Uprichard variety with a bank of the sweetly pretty Emma Wright beneath. A basket of K. of K. was especially fine and others of Mme. A. Chatenay, Mrs. C. Lamplough, Mrs. Tresham Gilbey and Maud were as conspicuous.

Rev. J. H. PEMBERTON showed epergnes of Roses, using generous sprays with blooms accompanied by buds, such material as one would select for making beautiful vases and bowls of Roses. Most of the sorts were raised by the exhibitor, of which the Adjutant, Pax,

Padre, Moonlight, Penelope, and Nur Mahal are a selection. The semi-double, pale straw-coloured Joanna Bridge is also deserving of special mention.

Messrs. JOHN WATERER, SONS AND CRISP, LTD., made a most delightful display with Roses which showed to advantage against a ground of black velvet. The blooms were arranged in generous masses of a single variety in baskets and epergnes. Notable sorts were Golden Emblem, Lady Pirrie, Hadley, Los Angeles, Covent Garden, Betty Uprichard, and Independence Day.

A somewhat similar group was staged by Messrs. ALLENS, a number of epergnes filled with fine blooms being utilised as foils in the general collection, with a row of epergnes as a background. Here we noticed such fine Roses as Mrs. Herbert Stevens, Sovereign, Emma Wright, Etoile de Holland, Clarice Goodacre, and Betty Uprichard.

Mr. ELISHA J. HICKS filled many epergnes and stands with Roses of superb quality, his style of displaying them being a little different to the others and very effective. Spread out in fan shape were glorious blooms of W. F. Dreer, Mrs. Foley Hobbs, Chas. E. Shea, Covent Garden, etc. with columns of Mme. Butterfly, Betty Uprichard and Joanna Bridge.

Messrs. B. R. CANT AND SONS utilised large baskets and small stands to display their many varieties, all of excellent quality. Dorothy Page Roberts, Covent Garden, Mme. Butterfly, La Tosca, Henrietta, and Lady Pirrie are a few of the more conspicuous sorts.

Messrs. ALEX. DICKSON AND SONS' exhibit was notable for a magnificent centre basket of Shot Silk, a Rose of most glorious colouring and pretty shape. Other baskets of Golden Emblem, Independence Day, and Sun Star were also very effective.

Mr. JOHN MATTOCK arranged his varieties in vases, with ample space to judge of the merits of each variety, and this was made easier by the strong relief into which the flowers were thrown, as they were backed by a ground of black velvet. Golden Emblem, Mrs. Henry Bowles, Mabel Morse, Los Angeles, Capt. R. Clark and Lady Inchiquin are a few of the sorts shown.

Messrs. D. PRIOR AND SON, LTD., featured the new Else Poulson in their exhibit. This Polyantha Rose appeals instantly by reason of its fine pink colour, with semi-double buds not unlike a tiny Azalea. There were columns of such sorts as Ophelia, Golden Emblem, Betty Uprichard and General McArthur, with a general collection in smaller stands and vases.

Messrs. S. MCGREDY AND SON had, in the opinion of many, the most effective display, and it was grand in every respect, but perhaps a little too much material was employed. The feature were baskets in which the blooms were attached to the handles and the front of the exhibit was draped with blooms held in metal receptacles. Independence Day, Lady Inchiquin, June Boyd, Emma Wright, Una Wallace, Mabel Morse and Doris Trayler are a selection of the many fine varieties.

Messrs. F. CANT AND Co. showed Queen Alexandra, Emma Wright, Golden Emblem, Lady Battersea, Ophelia, Betty Uprichard, and a host of other beautiful Roses in their very pretty exhibit of these popular flowers.

Messrs. A. WARNER AND SON displayed blooms of first quality in separate vases, distinct and spaced well apart, an effective method to judge of the merits of the respective sorts, and the quality was such as to admit of close criticism.

Messrs. S. BIDE AND SONS, LTD., displayed the new Phyllis Bide rambler Rose in generous quantity.

Mr. T. P. EDWARDS had a nice exhibit of Roses which included many of the best garden varieties.

CARNATIONS.

Messrs. ALLWOOD BROS. displayed Carnations of the perpetual-flowering type, their exhibit of these popular flowers being very charming.

They massed a number of choice blooms of Shot Silk as a centrepiece and this dark variety had two columns, one on either side, of the pale pink Michael Stoop, in close association. Immediately in the centre of the exhibit were five china receptacles filled with the variety Chintz. Other features were large vases of such beautiful sorts as Coral, Glow, Maine Sunshine, Laddie, Topsy and Geo. Allwood. As a separate exhibit this firm showed *Dianthus Allwoodii*, planting them in small panel beds in a turf setting, with a few ornate vases on pedestals containing cut blooms of the new Phoebe, an attractive shade of salmon; Nora, bluish lilac with maroon lacing; and Roger, deep salmon rayed with maroon.

Messrs. STUART LOW AND CO. had a very dainty exhibit of these Carnations, made especially attractive by overhanging baskets filled with the beautiful yellow Saffron, and with four vases of White Pearl as a centrepiece. Other receptacles, artistically disposed, contained choice blooms of Lady Hindlip, Mauve Queen, Brilliant, Sir Phillip Sassoon and other sorts.

Messrs. C. ENGELMANN, LTD., staged some eighty varieties of these Carnations all of the highest merit and arranged with much taste. Tall epergnes were utilised at the back to display such sorts as Tarzan, Delice, Laddie, Saffron, Topsy and Red Peerless, whilst ornamental bowls and vases in the body of the exhibit contained well-grown blooms of Red Laddie, Mrs. Hamilton Fellowes, White Pearl, Mrs. Hemus, Cupid and Donald, to mention only a few.

MISCELLANEOUS BORDER FLOWERS.

A particularly attractive group was arranged by Mr. AMOS PERRY with *Lilium Henryi*, *L. longiflorum giganteum*, *Kniphofia Golden Spur*, *K. grandiflorum nobilis*, and *K. Coralle* in the form of conical mounds, with masses of Michaelmas Daisies such as Snowball, Barr's Pink, Royal Blue, Queen of Colwall, and *Polygonum campanulatum*.

Kniphofias, *Sidalcea Rosy Gem*, various Michaelmas Daisies, *Solidagos*, and *Colchicums* were staged by Mr. G. A. MILLER. Messrs. RICH AND CO. showed Michaelmas Daisies, herbaceous Phloxes, and Sunflowers. An attractive rockery built by Mr. F. G. WOOD was appropriately planted with dwarf Conifers, prostrate shrubs and alpine, while adjoining, he had a good collection of border plants, including Michaelmas Daisies and *Fuchsia gracilis*.

A very attractive exhibit set up by the MAYTHAM GARDENS included elegant vases of Michaelmas Daisies Rachael Ballard, Nancy Ballard, and Ethel Ballard of good pink shades; *Sedum spectabile* and *Artemisia arborea*. Messrs. J. CHEAL AND SONS showed *Heliopsis gratissima*, *Senecio elivorum*, and *Rudbeckia nitida* on the staging, and had a large group of shrubs on a floor space. Mr. E. BALLARD's selection of Michaelmas Daisies included Countess, a graceful double pink; Bee's Blush, Royal Blue, and Powder Puff, a compact double pink; *Asters*, *Gladiolus*, *Gaillardias*, *Kniphofias*, and *Aconitums* were grouped by Messrs. G. GIBSON AND CO. Mr. G. JONES staged pots of *Potentilla fruticans*, *Sempervivums*, *Raoulia australis*, and *Saxifragas*.

An imposing collection of Michaelmas Daisies well arranged by Mr. H. J. JONES included Lady Lloyd, white; R. von. Goethe, a large rosy mauve; Maggie Perry, pink; Snowdrift, dainty, very free, pink; and H. J. Jones, white. He also had a large vase of *Helianthus Monarch*, the best of the Miss Mellish type of Sunflower. Messrs. MAXWELL AND BEALE built an attractive rockery and planted *Skimmias*, *Ericas*, *Gazania splendens*, *Colchicums* and *Scabiosa grandifolia*, and also had a good bed of Heaths. THE CENTRAL GARDENS SUPPLIES CO. showed *Mentha Requini*, a very dwarf Mint, *Raoulia australis*, *Sedums* in variety, and a selection of border flowers.

Michaelmas Daisies, such as Little Pink Lady, Grey Lady, and Maggie Perry, with

Rudbeckia Herbatonne, *Astrantia major*, and *Polygonum campanulatum*, were staged by the CHALK HILL NURSERY CO. A good collection of herbaceous Phlox shown by Messrs. F. FAIRBAIRN AND SONS included *Monarch*, *Triumph*, and Sir D. Beatty, purple, and Sir Douglas Haig, deep orange. Mr. T. BONES showed Michaelmas Daisies, including Ruby, Red Star, and Kate Bicomfield of pink shades, Snowdrift and Phyllis, bluish mauve. Mr. W. WELLS, JUNR. had *Asters Antwerp*, *Well's Favourite*, *Ethel Ballard* and *Walker's Pink* of pink shades, and *Royal Blue* and *Ultramarine* of rich dark blue colour.

Kniphofias were well shown by Messrs. M. PRICHARD AND SONS who also had large spikes of *Lilium auratum*, *Anemone japonica*, *Pyrethrum Mrs. Bruce Findlay*, and P. Queen Mary, and *Gentiana sino-ornata*. Tall herbaceous *Lobelias* were shown in considerable variety by Messrs. B. LADHAMS, LTD. with *Potterium obtusatum*, dwarf *Polygonums*, *Aconitums*, and perennial *Coreopsis*.

The Welsh Poppy and a larger form called *Meconopsis aurantiaca plena* were largely shown by Messrs. W. H. ROGERS AND SON. Both plants included good yellow and orange shades of colour. They also staged *Fuchsia pumila*, *Gaultheria procumbens*, *Euphorbia Cyparissias*, and *Sempervivums*. A pretty rockery was made by the Misses HOPKINS and appropriately planted. Excellent strains of *Pentstemons* in a number of distinct varieties were shown by Messrs. JOHN FORBES, LTD., who also exhibited herbaceous Phloxes. Messrs. BOWELL AND SKARRATT had a good collection of miscellaneous border flowers.

Particularly good Lupins were shown by Messrs. HARKNESS AND SONS. These were named varieties of their good strain of *L. Polyphyllus* and included *Flaming Torch*, orange-fawn, and Mrs. Morris, creamy fawn. They also showed early flowering *Chrysanthemums*. Messrs. W. H. SIMPSON AND SONS had *Antirrhinums* of an excellent strain and Michaelmas Daisies. On the floor Mr. T. CARLILE grouped Michaelmas Daisies, *Delphiniums*, *Gaillardias* and Lupins, and Mr. G. G. WHITELEGG also had a large group of similar flowers with a glowing vase of *Lupinus Sunshine*.

A large group attractively arranged on the floor by Messrs. WM. CUTBUSH AND SONS, contained *Lilium speciosum album*, *L. tigrinum*, many Michaelmas Daisies, *Dahlias* in good variety, *Pentstemons* and clumps of Heaths. Large and well-coloured flowers of *Calendula Ball's variety*, were associated with *Aster King George* and *Nepeta heterophyllus* by Mr. H. MARCHAM.

A very restrained, almost sombre rock garden was built by Mr. CLARENCE ELLIOTT, and in it he planted very few subjects, the chief being upright Irish Junipers of perfect compact pyramidal shape, and *Colchicums*.

Fresh and fragrant Violets were shown by Mr. J. J. KETTLE and Mr. BALDWIN PINNEY.

TREES AND SHRUBS.

Most flower in the tree and shrub section was provided by the Clematis which were shown very attractively by Messrs. G. JACKMAN AND SONS and Messrs. L. R. RUSSELL, LTD. The former showed excellent plants of *Crimson King*, *Lord Neville*, large, blue; *Empress of India*, of beautiful purple sheen; *Duchess of Sutherland*, red suffused with plum purple; *The President*, blue; *Lady Betty Balfour*, rich blue, and *Countess de Bouchard*, a very free-flowering soft pink variety.

Chief amongst the Clematis which Messrs. L. R. RUSSELL associated with tall ornamental Vines, hardy *Fuchsias*, *Cretaeus Lelandi* and *Ericas*, were *Nellie Moser*, *Gipsy Queen*, *Crimson King*, *Marie Boisselot*, white; Mr. Kenneth, shining lavender; *Gloire de St. Julien*, French white, and *Jackmanni superba*.

A large group, principally of Conifers, was arranged by Messrs. FLETCHER BROS., whose dominant plants were *Abies nobilis*, glauca, *A. Nordmanniana*, *Cupressus Lawsoniana* *Stewarti*, *Cupressus Lawsoniana* *Fletcheri*. They also showed *Berberis* in fruit and other deciduous shrubs. Several bushes of *Lonicera*

sempervirens in the interesting collection of Mr. R. C. NOTCUTT, were particularly well flowered and served to draw attention to the merits of other shrubs, such as *Berberis Coral*, *B. Wilsonae*, *Clerodendron foetidum* and *Cotoneaster Henryi* in bright autumn colour of fruits and foliage.

At the end of the hall, Mr. EDWIN HOLLAMBY staged two hundred plants of *Pyracantha Lelandi* growing in five-inch pots. These were uniformly sturdy and carried exceptionally heavy crops of bright berries. Bay trees in quantity and of good shape and some unusually tall, were shown by Messrs. ROBERT GREEN, LTD., whilst Mr. JOHN KLINKERT had a small collection of topiary specimens of good workmanship.

THE ORPINGTON NURSERIES, LTD., had a number of Conifers such as *Cryptomeria japonica nana*, *Retinospora plumosa aurea*, *R. pisifera aurea*, and *R. obtusa Crippsi* of especial value for the rock garden, and also showed *Picea Remontii*, *Retinospora plumosa sulphurea*, of erect habit; and *Cornus sibirica elegantissima* and *Ptelia trifoliata aurea*, *Cupressus* in variety were shown by Messrs. R. AND G. CUTBERT, who also had very shapely specimens of *Thuyas*, Japanese Maples and *Azalea Deni Giri* of intense autumn colour. Amongst the Conifers they placed groups of *Lilium Fortunei* and *L. speciosum Melpomene*. Excellent examples of autumn colour were to be seen in the group of Messrs. WALLACE AND CO., whose Japanese Maples and *Berberis Thunbergi* were of vivid scarlet colour. Their group also included stately specimens of *Silver Cedars*, *Abies*, *Retinosporas* and *Thuyas*, with groups of excellent plants of *Lilium speciosum rubrum*, *L. longifolium*, and *L. tigrinum Fortunei splendens*.

An interesting exhibition of hardy shrubs was arranged by Messrs. HILLIER AND SONS. The principal subjects were *Prunus sacchaliensis*, *Pistachia chinensis*, *Quercus coccinea splendens*, and *Euonymus alatus* in full autumn colouring. The hips of *Rose Moyesii* were beautiful and interesting, while along the front of the group they placed dwarf pot plants of *Rhododendron Falconeri*, *R. ficolactum* and *R. grande* bearing immense, rich green leaves.

Valuable and interesting trees and shrubs were also grouped with great skill by Messrs. A. CHARLTON AND SONS. They included very shapely specimens of *Picea pungens Moorheimii* and other useful Conifers, a well-grown bush of *Acanthopanax pentaphylla variegata*, *Cotoneaster salicifolia*, *Eriobotrya japonica*, and a heavily-fruited branch of the Dartmouth Crab. Unflowered *Rhododendrons* which have very large leaves were freely shown by Mr. G. REUTHE who also exhibited *Berberidopsis corallina*, *Magnolia grandiflora ferruginea*, *Picea Watsoniana*, and many border flowers, including *Liliums* and *Colchicums*.

Amongst the new plants submitted to the Floral Committee by the Hon. VICARY GIBBS, Aldenham House, Elstree, were *Berberis Aldenham Coral*, raised at Aldenham, which bore large, compact, pendulous clusters of fruit; *Pyrus Malus toringoides*, a Chinese species, bears plenty of smallish, obovate fruits, prettily flushed at the sunny side and has neat, cut leaves; *Berberis Beaniana*, also from China, has plentiful clusters of small, oval, greenish-yellow fruits.

Fruit and Vegetable Committee.

Present: Messrs. C. G. A. Nix (chairman) J. C. Allgrove, S. B. Dicks, J. Wilson, W. F. Giles, Geo. F. Tinley, Jas. Cheal, P. C. M. Veitch, A. Metcalfe, E. Beckett, A. H. Pearson, J. Harrison and A. N. Rawes.

The only exhibit before this Committee was a dish of Apple Saltcote Pippin for Award, but the variety was not in season, and it was decided to ask the exhibitor, Mr. H. CHAPMAN, to send fruits at one of the December meetings.

COLLECTIONS OF FRUIT.

STUDLEY HORTICULTURAL COLLEGE set up an exhibit of Apples and Pears comprising some forty varieties of the former and a dozen dishes of Pears. The fruits were excellent, both in size and appearance. The more notable culinary Apples were Peasgood's Nonesuch, Sandringham,

Warner's King, Newton Wonder, Bismarck, Alfriston and Lady Henniker; while of dessert sorts we noticed Allington Pippin, Cox's Orange Pippin, James Grieve, Wealthy, The Houblon, and King of the Pippins. The Pears included Doyenné du Comice, Durondeau, Beurré Superfin Beurré Diel, and Beurré Hardy.

The BARNHAM NURSERIES showed seventy varieties of Apples, the extensive exhibit making a very imposing display. Notable culinary Apples were Norfolk Beauty, Peasgood's Nonesuch, Lanes' Prince Albert, Bramley's Seedling, Lord Derby, Royal Jubilee and King Edward VII. Splendid dessert fruits were exhibited of Cox's Orange Pippin, Rival, Blenheim Pippin, Ellison's Orange, Allington Pippin, Lady Sudeley, The Houblon, Egremont Russet and Adams's Pearmain.

Messrs. STUART LOW AND Co. exhibited excellent Fig trees in pots, all shapely, healthy specimens carrying fine crops.

Mr. EDWARD J. PARSONS displayed varieties of Apples with decorations of autumn tinted foliage and berries. He had big fruits of Bowhill Pippin, Emperor Alexander, The Queen, Mère de Menage, Dr. Harvey, Edward VII, also dessert sorts such as Cox's Orange Pippin, Madresfield Court, Tom Putt and French Pearmain. Pears, Damson Prune and Worcester Berry were included in the collection.

CUPS AND MEDALS AWARDED BY THE COUNCIL.

Coronation Cup.—To Messrs. DOBBIE AND Co., for the most meritorious group in the show.

Wigan Cup.—To Mr. E. J. HICKS, for the best exhibit of Roses.

Silver Cups.—To Messrs. CHAPLIN BROS., LTD., for Roses; to Messrs. ALEX. DICKSON AND SONS, LTD., for Roses; to Messrs. S. MCGREDY AND SON, for Roses; to Messrs. HILLIER AND SONS, for Conifers and other shrubs; to Messrs. DICKSON AND ROBINSON, for Dahlias; to Messrs. ALLWOOD BROS., for Carnations; to Messrs. BLACKMORE AND LANGDON, for Begonias; to A. T. BRANDT, Esq., for Lilies, Palms and Codiaeums; to Messrs. J. PEED AND SON, for greenhouse plants; and to Messrs. SUTTON AND SONS, for Gloxinias.

Gold Medals.—To the BARNHAM NURSERIES, LTD., for fruit; to Mr. E. J. HICKS, for Roses; to Mr. GEO. PRINCE, for Roses; and to Messrs. DOBBIE AND Co., for Dahlias.

Silver-Gilt Flora Medals.—To Messrs. D. PRIOR AND SON, for Roses; to Mr. T. ROBINSON, for Roses; to Messrs. STUART LOW AND Co., for Orchids; to Messrs. J. CHEAL AND SONS, for shrubs; to Messrs. JARMAN AND Co., for Dahlias; to Mr. H. J. JONES, for Dahlias; to Mr. J. B. RIDING, for Dahlias; to Messrs. J. STREDWICK AND SON, for Dahlias; to Messrs. W. TRESEDER LTD., for Dahlias; to Mr. J. T. WEST, for Dahlias; to Messrs. C. ENGELMANN, LTD., for Carnations; to Messrs. STUART, LOW AND Co., for Carnations; to Mr. JAMES MACDONALD, for grass and Heath garden; to Messrs. AUSTIN and McASLAN, for Gladioli; to Messrs. R. H. BATH, LTD., for Gladioli; to Messrs. J. CARTER AND Co., for Liliiums, Clerodendrons, and other greenhouse plants; to Mr. H. J. JONES for Michaelmas Daisies; to Mr. J. W. FORSYTH, for Chrysanthemums; to Messrs. W. CUTBUSH AND SON, for hardy flowers; to Mr. W. WELLS, Jnr., for hardy flowers; to Messrs. WILSON AND AGAR, for hardy flowers; to Messrs. B. LADHAMS, LTD., for hardy plants and hybrid Lobelias; to Messrs. G. JACKMAN AND SON, for hardy flowers.

Silver-Gilt Lindley Medal.—To Mr. F. F. FRITH, on behalf of the South African Railways, for an interesting group of succulents.

Silver-Gilt Banksian Medals.—To the Rev. J. H. PEMBERTON, for Roses; to Messrs. WATERER, SONS AND CRISP, for Roses; to Mr. G. REUTHE, for Rhododendrons and other shrubs; to Messrs. R. WALLACE AND Co., for shrubs; to Messrs. J. CHEAL AND SONS, for Dahlias; to Mr. C. TURNER, for Dahlias; to the ORPINGTON NURSERIES Co., for Gladioli; to Mr. E. BALLARD, for Michaelmas Daisies; to Mr. AMOS PERRY, for hardy flowers; to Messrs. J. CHEAL AND SONS, for hardy flowers; to the

CHALKHILL NURSERIES, for hardy plants and Poppies; and to Messrs. L. R. RUSSELL, LTD., for Clematis.

Silver Flora Medals.—To Messrs. A. J. AND C. ALLEN, for Roses; to Messrs. B. R. CANT AND SONS, for Roses; Messrs. F. CANT AND Co., for Roses; to Mr. T. EDWARDS, for Roses; to Messrs. A. WARNER AND SON, for Roses; to Mr. AMOS PERRY, for hardy Ferns; to Messrs. BLACK AND FLORY, for Orchids; to Messrs. COWAN AND Co., for Orchids; to Messrs. A. CHARLTON AND SONS, for ornamental trees and shrubs; to Mr. R. C. NOTCUTT, for shrubs; to Messrs. CARTER, PAGE AND Co., for Dahlias; to Mr. R. J. CASE, for Pelargoniums; to Mr. W. YANDELL, for Chrysanthemums and Violas; to Messrs. KEITH LUXFORD AND Co., for Chrysanthemums; to Mr. S. SMITH, for Cacti and Succulents; to Messrs. M. PRICHARD AND SONS, for alpine and herbaceous plants; to Mr. F. G. WOOD, for herbaceous and alpine plants; to Mr. GAVIN JONES, for alpine plants; to Messrs. ISAAC HOUSE AND SON, for Scabious and Kniphofias; to Messrs. HARKNESS AND SONS, for hardy flowers; to Messrs. J. FORBES, LTD., for Phloxes and Pentstemons; and to Messrs. G. JACKMAN AND SONS, for Clematis.

Silver Banksian Medals.—To Mr. J. MATTOCK, for Roses; to Messrs. R. AND G. CUTHBERT, for Conifers; to Messrs. FLETCHER BROS., for Conifers and berried plants; to Messrs. R. GREEN, LTD., for Bay trees; to Messrs. HARRODS, LTD., for Bay and Box trees; to Mr. H. HEMSLEY, for Dahlias; to Messrs. D. PRIOR AND SON, for Dahlias; to Messrs. LOWE AND GIBSON, for Gladioli; to Messrs. MAXWELL AND BEALE, for alpine plants and Heaths; to Mr. T. BONES, for hardy flowers; to Messrs. G. GIBSON AND Co., for herbaceous and alpine plants; to Mr. CLARENCE ELLIOTT, for alpine plants and dwarf shrubs; to Messrs. BAKERS, for hardy flowers; to Messrs. W. H. ROGERS AND SON, LTD., for alpine plants and hardy perennials; to Mr. H. MARCHAM, for Asters and Marigolds; and to Messrs. F. FAIRBAIRN AND SONS, for Phloxes and other hardy flowers.

Silver Hogg Medal.—To STUDLEY COLLEGE, for fruit.

Bronze Flora Medals.—To Mr. EDWIN HOLAMBY, for berried shrubs; to Mr. J. KLINKERT for clipped trees; to the ORPINGTON NURSERIES Co., for shrubs; to Messrs. BOWELL AND SKARRATT, for alpine and herbaceous plants; to the CENTRAL GARDEN SUPPLIES, LTD., for herbaceous and alpine plants; to Mr. T. CARLILE, for Delphiniums; and to Mr. G. A. MILLER for hardy plants;

Bronze Hogg Medal.—To Messrs. S. LOW AND Co., for fruit.

Bronze Banksian Medals.—To Mr. A. EDWARD for Gladioli; to Messrs. W. H. SIMPSON AND SONS, for Antirrhinums and Asters; to Mr. G. G. WHITELEGG, for hardy flowers; and to THE MAYTHAM GARDENS, for herbaceous flowers.

NATIONAL ROSE.

SEPTEMBER 17 and 18.—Fine weather favoured the autumn exhibition of the National Rose Society, which was again held this year under canvas in Regent's Park. The show has greatly outgrown the limitations of the Royal Horticultural Society's hall, but an autumn show under canvas is liable to be spoiled by unfavourable weather and the Society is to be congratulated that it met with nothing more discomforting than a "damp floor." It is difficult to judge of the attendance in such a large open space, but visitors did not seem to be quite so numerous as usual. With regard to the Roses, no better autumn exhibition of these flowers has been forthcoming, and the colours were especially brilliant. Several novelties of merit were submitted for awards, and of these three received the Society's Gold Medal.

GOLD MEDALS.

Angile Pernet (Fig. 98).—A variety of the Pernetiana section of clear apricot colour, with a rosy sheen. The blooms are rather globular without a pointed centre, but the form is good, both in the bud and when blown, and in addition

there is considerable fragrance. The foliage is exceptionally handsome, being of a beautiful glossy-green and very leathery in texture. The plant has a sturdy habit and is very free in flowering. Raised by M. J. PERNET-DUCHER and exhibited by Messrs. G. BECKWITH AND SON.

Julia Countess of Dartry (Fig. 99).—This Rose is of the largest size, of a rosy cerise colour and beautifully formed. It is recommended both for exhibition and garden purposes. Shown by Dr. CAMPBELL HALL.

Margaret McGredy.—A variety of the Queen Alexandra type of rose-red, almost scarlet colour—by some described as flame. The flowers are globular in shape. The under-surface of the petals is suffused with yellow which gives a pretty effect with the rich colour of the upper surface. We regret that we could detect no fragrance in this fine Rose. Shown by Messrs. S. MCGREDY AND SON.

CERTIFICATES OF MERIT.

Golden Glean.—This is a variety of great promise, judged by one of the flowers exhibited. It belongs to the H.T. section, and makes upright growths sending out very robust flower stems carrying blooms of a clear yellow colour, paler than in Golden Emblem. When expanded, the bloom shows a distinct centre which somewhat detracts from its value. Shown by Messrs. G. BECKWITH AND SON.

Desmond Johnston.—A H.T. variety of small but exquisite shape, especially in the bud stage—a type of Rose suitable for florists' purposes. The colour is yellow and red, there being considerable gold on the under-surface, whilst the upper side of the petals carries a sheen of purple. The foliage is vigorous, and the stem long and stout, such as is required by growers for market. Shown by Messrs. S. MCGREDY AND SON.

Lady Helen Maglona.—A H.T. variety of somewhat globular shape, full-petalled and fragrant. The colour is deep crimson with a maroon sheen. Some of the foliage had traces of mildew, but this may be due to the exceptionally wet summer. Shown by Messrs. ALEX. DICKSON AND SONS.

Mrs. S. W. Burgess.—A very pretty H.T. Rose of pale clear apricot colour, very sweet in the bud and with exceptionally handsome foliage, both the leaves and the stems being ruby coloured. Obviously a good Rose for floral decoration. Shown by Mr. S. W. BURGESS, Tonbridge.

The Clay Cup for fragrance was awarded to the variety Arthur Cook which received the N.R.S. Gold Medal at Bath in the autumn of 1924. It is a crimson-maroon variety and the fragrance is very pronounced.

NURSERYMEN'S CLASSES.

The various exhibits of twenty-four distinct exhibition Roses were of good quality, and for the most part they were composed of clean, fresh blooms typical in size and form. The best collection was staged by Mr. A. (SANDY) DICKSON, whose outstanding varieties were the fragrant, rich yellow Clara Curtis, Gorgeous, of good colour, Lady Maureen Stewart, Florence Forrester and The General. In the second prize exhibit of Mr. C. GREGORY, the outstanding blooms were of H. V. Machin, Mrs. George Marriott, J. G. Glassford, and Esme. Messrs. D. PRIOR AND SONS, who were third in this important class, also had a meritorious collection.

In the class for eighteen exhibition varieties the chief place was won by Mr. GEORGE PRINCE with an admirable collection which included Frau Karl Druschki, Edith Cavell, H. V. Machin, George Dickson and Earl Haig of particularly good quality. Showing typical blooms of such fine sorts as Lyon Rose, George Dickson, Mrs. George Norwood and H. V. Machin, Messrs. H. LANE AND SON were second, while Messrs. ENGLISH AND SON were third.

The best Tea and Noisette Roses were shown by Mr. GEORGE PRINCE, and his dozen varieties included particularly good specimens of Alex

Hill Gray, Muriel Wilson, Maman Cochet and Auguste Comte. Mr. HENRY DREW, the second prize winner, had fresh and fragrant examples of Marie van Houtte, W. R. Smith, Auguste Comte and White Maman Cochet. Messrs. C. LONGLEY AND SONS were third.

While the baskets of Roses were not such a prominent feature of the show as usual, the competition was fairly good, and the blooms were of high quality. The best three of exhibition Roses were of George Dickson, Frau Karl Druschki and Florence Forrester, shown by Mr. C. GREGORY, while Messrs. T. SMITH AND SONS were second with very good baskets of Gorgeous, Lieut. Chauré, and Frau Karl Druschki.

Messrs. CHAPLIN BROS. were first in the class for five baskets of Decorative Roses, and they had lovely blooms of Mrs. Tresham Gilbey, Betty and Madame Abel Chatenay in their exhibit. Mr. HENRY DREW, who was second, showed good baskets of Ophelia and Los Angeles, Messrs. T. SMITH AND SONS, showing Lady Pirrie, Mrs. Henry Morse, and Madame Edouard Herriot of great charm, were first in the class for three baskets of Decorative Roses.

Messrs. D. PRIOR AND SONS, who were second, were first in the class for a similar number of dwarf Polyantha varieties, of which their baskets of Kirsten Poulsen, Alice Amos, and Else Poulsen were particularly charming examples of this dainty type of Rose. The second prize was awarded to Messrs. WATERER, SONS AND CRISP who included baskets of the floriferous Jessie and Mrs. W. H. Cutbush.

GROUPS OF ROSES.

Competition in the class which provided a table measuring ten square feet for arranging a representative display of cut Roses was large and very keen. The styles of treatment were very much the same as at the summer show, and there was rather a similarity in the prize collections. The first prize was awarded to Messrs. S. MCGREDY AND SON for an excellent group of generous pillars of such varieties as Mabel Morse, Betty Uprichard, Golden Emblem and Mrs. Henry Morse, which rose above baskets and large vases of other beautiful varieties. The second prize was awarded to Mr. ELISHA J. HICKS for a similar group, except that instead of a bordering of sprays of Polyantha varieties he utilised Rose sprays well furnished with bright hips. His principal Roses were Ophelia, Sunstar, Betty, Clovelly and Joanna Bridge. Messrs. ALEX. DICKSON AND SONS were third, and Messrs. CHAPLIN BROS. were fourth, while the other very meritorious collections were, perforce, unrewarded.

In the similar class which provides a table measuring eight square feet Mr. C. GREGORY was first with an arrangement of corner pillars linked to a centre and rising above baskets and vases. This effective exhibit contained massed blooms of Lady Roundhay, Madame Butterfly, Mabel Morse, Lady Inchiquin, K. of K., and other valuable sorts. Messrs. D. PRIOR AND SONS were a good second in this important class, and Messrs. A. J. AND C. ALLEN were third, both with very attractive exhibits.

The first prize in the class for a somewhat smaller group was won by Mr. GEORGE PRINCE with a very pretty arrangement of decorated baskets and vases. The chief varieties so well used were La Tosca, Madame Butterfly, Mrs. Henry Stevens, Hadley, Shot Silk and Golden Emblem. Mr. W. BENTLEY, who was second, had good blooms of Betty, Lady Inchiquin, Shot Silk and Independence Day. Mr. J. MATTOCK was a good third.

The class for thirty-six varieties of any type or types of Rose was especially interesting in that Messrs. A. HARKNESS AND Co. departed from the conventional style of arrangement, and were rewarded with the first prize. Their graceful baskets contained very beautiful blooms of Mabel Morse, Isobel, Lord Charlemont, Sunstar and other useful varieties. The second prize was awarded to Messrs. A. WARNER AND SON who had very good vases of such varieties as Lady Inchiquin, Lord Charlemont, Red Star and Mrs. Henry Bowles; Mr. H. STREET was third.

Competition was not quite so strong in the class for eighteen varieties of miscellaneous Roses, where Messrs. CHAPLIN BROS. were first with a very good collection which included Madame Butterfly, Rev. F. Page Roberts, Duchess of Wellington and Frau Karl Druschki. Mr. GEORGE PRINCE, who was a good second, had fine vases of Hoosier Beauty, General McArthur, Madame Edouard Herriot and Sunstar; Messrs. MORSE BROS. were third.

The best twenty-four varieties was shown by Mr. J. MATTOCK who had lovely vases of Westfield Star, Moonlight, Lady Hillingdon, and Los Angeles. Mr. G. LILLEY, in his second prize collection, included Padre, Golden Emblem and General McArthur.

AMATEURS' CLASSES.

The Amateurs' section included nineteen classes and most of the exhibits were exceedingly good.

There were two classes for twelve blooms, the one for distinct varieties, open to all amateurs irrespective of the number of plants they grow, and the other for not fewer than nine varieties, open to growers of fewer than 1,000 plants.

There were four excellent exhibits in the class in which Mr. JOHN N. HART, Potters Bar, excelled, and his exhibit included the best bloom in the show exhibited by an amateur—a superb specimen of J. G. Glassford—to which a Silver-Gilt Medal was awarded. Mr. HART's other varieties included Hugh Dickson, J. N. Hart, Mrs. C. Lamplough, Molly Sharman Crawford, H. V. Machin, and Mrs. G. Marriott; second, C. DIXON, Esq., Sheffield, whose finest blooms were J. C. Glassford, Molly Bligh, Mrs. Raymond Escotet and Miss Willmott.

In the other class for twelve blooms five competed, and Mr. A. MITCHELL, Bradford, was first with a splendid exhibit which included good blooms of Mrs. Geo. Sawyer, Martha Drew, Red Star, J. G. Glassford, Frau Karl Druschki and Mrs. Henry Bowles; second, Mr. W. E. MOORE, Ickenham, who showed Madame L. Crette, White Maman Cochet, Edgar M. Burnett, and George Dickson.

In a class for six blooms, distinct, open to growers of fewer than 500 plants, Mr. R. de V. PRYOR, Hitchin, had the best exhibit of three, and was followed by Mr. R. A. SMITH, Hertford. Mr. PRYOR's best blooms were Marjorie Bulkeley, George Dickson, Dr. A. I. Petyt, Augustus Hartmann, J. G. Glassford and Florence Pemberton.

For six blooms in not fewer than four varieties, open to growers of fewer than 250 plants, Mr. J. TILLER, West Drayton, was placed first, his blooms of Gorgeous, J. G. Glassford (very large), Ethel Somerset, and Capt. Kilbee Stuart, being exceptionally good. The second prize was awarded to Mr. E. G. GAMM, Tankerton, whose blooms was small but of very refined quality.

The best Roses grown within a radius of ten miles of Charing Cross were shown by Mr. A. NORMAN ROGERS, East Putney, whose back row blooms of Mrs. Geo. Marriott and Mdlle. Louise Crette was remarkably good.

In a similar class for four varieties Mr. A. NORMAN ROGERS was again successful.

A magnificent specimen of Mdlle. Louise Crette was the outstanding feature of Mr. W. E. MOORE's exhibit in the class for six blooms, distinct, open to members of the Society who grow and stage their own varieties without assistance. In a similar class for not fewer than four varieties Mr. A. M. DARLING, Tonbridge, had an easy win. Some excellent blooms were shown by Mr. W. E. MOORE in the class for six blooms in not fewer than four varieties, open to growers of not more than 250 Tea and Noisette varieties. His blooms remained fresh and beautiful late in the afternoon of the first day, and included the varieties Maman Cochet, Auguste Comte, Mrs. Herbert Stevens, Mrs. Edward Mawley, Lady Plymouth and White Maman Cochet; second, Mr. F. H. FIELDGATE, Colchester. Other first prize winners included Mr. S. W. BURGESS, Tonbridge, for six distinct varieties, not fewer than three nor more than seven stems of each variety; Mr. A. L. F. COOK, Hayes, in a similar class for growers who cultivate

and stage their own Roses; and Mr. S. E. TATTERSHALL, Orpington, open to growers of fewer than 250 plants.

DECORATIVE CLASSES.

Six classes were provided in this section, two in the nurserymen's classes, and four in the amateurs' classes. The exhibits were arranged in a large tent by themselves, and collectively made a very pretty section of the show. Nothing very original was forthcoming, and most of the exhibitors relied on varieties which have gained awards in recent years, the quality of the blooms being a great factor in the judges' decisions.

The most important class was for a dinner table decoration of cut Roses, open only to members of the National Rose Society, in which only glass or china receptacles were permitted. Five competed, and the first prize was awarded to Mrs. TISDALL, Woodford Green, who arranged a most beautiful centre bowl of Ophelia, utilising blooms of superb quality, and small bowls containing three blooms, one at each corner. It was a simple but effective decoration. The second prize was awarded to Mrs. MAY, Waltham Cross, for almost a replica exhibit, but in this case the variety was the richer-coloured, Mme. Butterfly, and she employed six small receptacles instead of four; third, Mrs. A. R. BIDE, Farnham, who employed the new climbing Polyantha variety Phyllis Bide.

Seven competed in the Amateurs' class for a dinner table decorated with cut Roses and arranged with Rose foliage only. The winning table, shown by Mrs. COURTNEY PAGE, Enfield, was by far the best in the two sections. The variety Roselandia was used wholly, a most gorgeous Rose of pale apricot, and the use of Rosa sericea pteracantha and R. Willmottiae foliage was most effective. The second prize was awarded to Mrs. OAKLEY FISHER, Sudbury, for a decoration of the same variety; third, Mrs. F. CHARLTON, Yiewsley, with Madame Butterfly.

The best bowl of cut Roses in the Nurserymen's section, lightly arranged with Rose foliage only, was shown by Mrs. TISDALL, Woodford Green, who arranged gorgeous blooms of Madame Butterfly to make a very large exhibit; the second prize exhibit, shown by Mrs. A. BIDE, was very similar. She used the same variety and even more blooms than in the first prize exhibit.

Mrs. COURTNEY PAGE won the first prize for a bowl of cut Roses in the Amateurs' section, with a bowl of Madame Butterfly, practically identical with the others in the nurserymen's class. Second, Mrs. F. CHARLTON with glorious blooms of the red Richmond. The best vase of Roses was arranged by Miss M. E. WEST, Reigate, who utilised the variety Richmond.

Mrs. COURTNEY PAGE showed the best bowl of Roses, the flowers to be grown by the exhibitor, in which the variety Irish Elegance predominated.

MISCELLANEOUS EXHIBITS.

In the large conservatory in the corridor there were the usual exhibits of other flowers. Gladioli were well shown by Messrs. R. H. BATH, LTD.; Mr. J. B. RIDING, Mr. J. T. WEST, Messrs. J. CHEAL AND SONS, and Mr. C. TURNER had good collections of Dahlias. Messrs. ISAAC HOUSE AND SONS set up a large group of Kniphofia Mount Etna and also showed their varieties of Scabious. Carnations were staged by Messrs. ALLWOOD BROS., while Messrs. REAMSBOTTOM AND Co. showed St. Brigid Anemones, and the well-known "Abol" insecticides, fungicides and appliances made an attractive display.

NATIONAL DAHLIA.

SEPTEMBER 9.—The annual show of this Society, which was held at the R.H.S. Hall, Westminster, was one of the most successful of recent years. The many trade exhibits were extensive and of good quality, while with a few, not very important, exceptions the competition was better than usual, and the general quality of the blooms was high.

Very many seedling Dahlias were placed before the Joint Committee which made selections for trial at Wisley. Amongst those selected we were surprised to find so many bearing names of older varieties, and as there is no object in recording them they are omitted from the following list of novelties.

Dignity.—A long-stemmed Cactus Dahlia of pinkish-mauve colouring.

Dove.—A Cactus variety with the palest lilac flushing.

Floria.—A good Cactus bloom of pale yellow colour heavily stippled with pink.

Gaiety.—A bright carmine-coloured Cactus Dahlia which has a rich yellow zone.

Nero.—A Cactus variety of uncommon colouring. The above varieties were shown by Mr. H. SHOESMITH.

Fanfare.—A single Dahlia of crimson colour with a yellow zone.

Mrs. E. Blount.—A scarlet Paeony-flowered variety.

Mrs. H. C. Scrimgeour.—An orange-coloured miniature Paeony.

Princess.—A Pompon Dahlia of blush lilac colour.

Rowley Star.—A crimson variety.

Yellow Queen.—A miniature Paeony-flowered variety. These six varieties were shown by Messrs. J. CHEAL AND SONS.

OPEN CLASSES.

The only exhibitors of show and fancy Dahlias were Messrs. WM. TRESEDER, LTD., who staged a particularly good twenty-four varieties and were deservedly awarded the first prize. Their blooms, which were large and of perfect form, included the following varieties: W. Girdlestone, Pandora, Charles Wood, Mr. Chamberlain and Willie Garrett.

In the principal class for show Cactus Dahlias the first prize was won by Mr. H. WOOLMAN, and Messrs. J. STREDWICK AND SON were second. The winner's excellent collection of six blooms each of twelve varieties included Sidney Jones, Gloriosa, Ballet Girl, A. E. Amos, and Alabaster. The order was reversed in the class for twenty-four distinct varieties shown on boards, and Messrs. J. STREDWICK AND SON won the first prize, showing particularly good specimens of Southern Maid, F. W. Fellowes, Erica, Supreme and Ruddy Glow.

The best twelve Cactus varieties, also shown on boards, was an excellent collection staged by Mr. W. G. CRAMP of Streatham, who had magnificent blooms of Meridian, Mammoth, Virginia and E. S. Jackson. Showing G. H. Barlow, Messrs. J. STREDWICK AND SON were first in the class for six blooms of any one Cactus variety, and Mr. H. WOOLMAN, who had almost as grand specimens of Ballet Girl, was second.

There were no exhibits in the classes for Garden Cactus, Pompons and Single Dahlias in the open section, and as there has been but little interest in them of late it seems that they are not required, so probably the Committee may abandon them and transfer the prize money to the amateur classes where the competition and exhibits were very good indeed.

With unnamed blooms, Messrs. WM. TRESEDER, LTD., were awarded the first prizes for six varieties of large-flowered Paeony varieties, for twelve varieties, and for six varieties of Collerette Dahlias, while Mr. A. J. COBB was awarded the first prize for six distinct vases of small-flowered Paeony varieties. Mr. H. WOOLMAN, showing such sorts as Viscount French, Constancy and President Wilson was first in the class for six vases of large Decoratives, and EARL BEATTY (gr. Mr. A. Barrett), Reigate Priory, Reigate, was similarly successful with the small Decoratives. He included fascinating vases of Topsy, Marriena and Raider.

AMATEURS' CLASSES.

The show and fancy Dahlias were decidedly of better quality than for some years past. In the class for twelve varieties Mr. A. J. BARNES, Bedford, had particularly good blooms of Mrs. Sanders, Peacock and J. Cocker, while the six first prize blooms of Mr. H. LANGDON, Shenfield, included R. T. Rawlings and Mrs. Langtry of considerable merit.

Mr. W. G. CRAMP, who showed so well in the open section, was awarded the first prize for nine excellent vases of Cactus varieties amongst which Edgar S. Jackson, Valour and Mammoth were splendid. He was also first with twelve varieties, shown on boards, and of these his very best were Ballet Girl, Pennant, and Abbotsford. Mr. A. F. TOFIELD, Southampton, was a very good second, but the positions were reversed in the class for three blooms each of four varieties of Cactus Dahlias, where Mr. TOFIELD was first with an excellent exhibit.

Mr. A. BROWN, Seagrave, was first for three blooms of six varieties distinct of Cactus Dahlias, and his meritorious collection included Edgar S. Jackson, Golden Crown and Mrs. A. Harvey. The best six varieties were shown by Mr. F. CHENNELLS, Wheathampstead.

The first prize Pompon Dahlias were perfect examples of these fascinating little flowers and were the best that have been shown in London for many years. The exhibitor of the first prize twelve varieties, six blooms of each, was Mr. A. J. BARNES, who staged some good show and fancy varieties. His Pompons included Nerissa, Sunset and Glow; Mrs. CLARK, Bromley, was second. In the class for six varieties the same high quality ruled and Mr. COURAGE, Crawley, had excellent blooms of Darkest of All, Regulus and Bacchus. This was a very good class and EARL BEATTY, who was second, had a fine exhibit.

Single Dahlias were well-shown by Mr. A. BROWN who had perfect blooms of Sunset, and Little Jem. Mr. M. HOWARD, Chesham, showing Mrs. Rowett and Gatton Star, was first with six Star Dahlias, and also with six Decorative varieties, while Mr. S. H. WHITE, Southampton, had the best four varieties of the same type. Collerette Dahlias were particularly well-shown by Mr. J. F. GREGORY, Luton, who staged decorative vases of Regularity, Bonfire, Eden and other sorts.

The classes for amateurs who do not employ any paid assistance were well-filled with very good blooms. Mr. A. BROWN won first prizes for six Cactus varieties, and, with excellent blooms of Golden Crown, for any yellow variety. He was also first with nine blooms of Collerette Dahlias. Pompon Dahlias were very good indeed, and Mr. A. E. POORE was first with Radiator, Glow, Jessica and other dainty varieties. The best Star and miniature Dahlias were shown by Mr. M. HOWARD.

DECORATIVE CLASSES.

In the open section, the first prize Dinner Table of Star Dahlias was arranged by Miss E. JONES, Highgate, while Mrs. C. A. TISDALL, Woodford Green, was second, and in the class for any other Dahlias Mr. W. G. CRAMP was first and Mrs. TISDALL was again second. Messrs. WM. TRESEDER, LTD., won the first prize for a vase of Dahlias with any kind of hardy foliage, and in the class for Paeony-flowered varieties Mr. A. J. COBB was first. The best three vases for sideboard decoration were arranged by Mr. D. B. CRANE.

In the amateurs' classes Mrs. COURTENAY PAGE, Enfield, added to her many artistic triumphs by winning the first prize with a beautiful basket of Dahlias, and by being second with a bowl of Dahlias. Mrs. W. YANDELL, Maidenhead, won the first prize with a charming vase of Dahlias, and was second in the basket class, while Miss H. WOOLVEN, Pullborough, was first with a vase of Dahlias.

The new class for a collection of Floral Designs to illustrate the decorative capabilities of the Dahlia did not induce the competition it deserved. The handsome Monro Challenge Cup was awarded to Messrs. WM. TRESEDER, LTD., the only exhibitor, for a number of well-executed conventional designs suitable for almost every occasion.

NON-COMPETITIVE EXHIBITS.

Extensive exhibits of Dahlias, usually of all the various types were arranged by the chief trade growers. Messrs. J. CHEAL AND SONS were awarded a Large Gold Medal for a collection which included King Harold and President Wilson (Decoratives); Mark, Jenny and Lady

Denman (Paeony-flowered); Diadem, Lucien and Jean (Collerettes), and Jubilee, Etna and Benbow (Singles).

Gold Medals were awarded to Mr. H. J. JONES and to Mr. J. T. WEST for excellent collections. The useful miniature Paeony-flowered Dahlias were well shown by Mr. WEST who staged Sparklet, Helen, Sunset and Kenneth of this type.

Large Silver-Gilt Medals were awarded to Messrs. WATERER, SONS AND CRISP, and to Mr. H. WOOLMAN. Silver-Gilt Medals were awarded to Mr. J. B. RIDING, to Messrs. JARMAN AND CO., to Mr. H. HEMSLEY and to Mr. FORSYTH for their attractive collections of Dahlias.

Obituary.

Sir Francis Darwin.—We regret to record that Sir Francis Darwin, F.R.S. died at Cambridge on September 19 at the age of 77, after a prolonged period of ill-health. Sir Francis Darwin was a distinguished botanist, an inspiring teacher and an indefatigable investigator into the physiology of plants, which subject his researches did much to advance. Whilst still a young man and after studying science at Cambridge and in Germany, Sir Francis found his vocation in botanical research. For some eight years he acted as Secretary and assistant to his father and it was whilst thus engaged that the remarkable work bearing the names of Charles and Francis Darwin, on the *Power of Movement in Plants* was published. In that work it was shown for the first time that plants have much in common with animals in their power and method of perceiving change in environment. The discovery that the seat of reception of the stimulus which causes a root to grow vertically downward, and to right itself when displaced from the vertical, resides in the root tip, was epoch-making and gave rise to no small controversy. Even Prof. Sachs, the leader of plant physiologists, thought it worth while to criticise the conclusions and expressed his criticism in language which was more vigorous than polite. It says much for Francis Darwin's equanimous and generous nature that when in after years he happened to speak of Prof. Sachs under whom he had worked in Berlin, he spoke as though he remembered only the kindness which he had received and had forgotten altogether the rudeness with which his early discoveries made jointly with his great father had been greeted. This moderation of mind, combined with a modesty which his intimates admired as much as they deplored, gave a singular and unique charm to Francis Darwin's character. Retiring, yet full of fun, confessing as he once did to the writer that he enjoyed the Society of his brothers more than that of any other men, Darwin probably never knew how greatly he was beloved by those of his students who were brought into close personal touch with him. No one, however, who has read his life of Charles Darwin can fail of admiration and gratitude for that remarkable work. Many are the young biologists that it has inspired and still more are the men and women who are the better for its perusal—seeing more clearly the beauty of truth and ensuing it more closely. It is indeed a great work and one which confers on the writer a lasting and splendid title to fame. Francis Darwin had indeed literary qualities of a high order. Well does the present writer remember walking with him towards his home in Cambridge and asking eagerly what he thought of an account of a research which the young disciple had written. With infinite kindness in his voice Darwin said, "an old friend once remarked to me on a similar occasion 'you have no idea how it informs your style if you leave out every other word.' Allice so kindly given and so cogent was to be treasured—and it has been. A fine Englishman, unselfish, devoted to the pursuit of truth, eager to help his young men, Darwin leaves a gap in the rank of botanists which cannot be filled.

MARKETS.

COVENT GARDEN, Tuesday, September 22nd, 1925.

Plants in Pots, etc.; Average Wholesale Prices.
(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum	...	Erica gracilis, 48's	...
cuneatum	10 0-13 0	per doz.	27 0-30 0
per doz.	...	Nivalis, 48's per	...
elegans	10 0-12 0	doz.	27 0-30 0
Aralia Sieboldii	9 0-10 0		
Araucarias, per	...	Above varieties	...
doz.	30 0-42 0	in 60's, per doz.	12 0-15 0
Asparagus plu-	...	in Thumbs, per	...
mosus	12 0-18 0	doz.	9 0-10 0
—Sprengeri	12 0-18 0	Marguerites, 48's	...
Aspidistra, green	36 0-60 0	per doz.	15 0-18
Asplenium, per	...	Nephrolepis in	...
doz.	12 0-18 0	variety	12 0-18 0
—32's	24 0-30 0	—32's	24 0-30 0
—nidus	12 0-15 0	Palms, Kentia	30 0-48 0
		—60's	15 0-18 0
Cacti, per tray,	...	Pteris, in variety	10 0-15 0
—12's, 15's	5 0-7 0	—large 60's	5 0-6 0
Chrysanthemums,	...	—small	4 0-5 0
pot grown, in	...	—72's per tray	2 0-3 0
variety, 48's per	18 0-24 0	of 15's	...
doz.	...	Solanums, 48's per	...
Crotons, per doz.	30 0-45 0	doz.	12 0-15 0
Cyrtomium	10 0-25 0	Viscarias, 48's	15 0-18 0
		per doz.	...

REMARKS.—All requirements have shown some improvement on the previous week owing to larger orders from the provinces. Carnations are improving in quality; the best sorts on offer are (scarlet) Aviator and Our Prince, (pink) Delight, Enchantress Supreme, Laddie, Lady Northcliffe, May-day, Mrs. Hemus, Mrs. Ward, Peerless and Cupid, (crimson) Enid and Topsy, (White) white Perfection and White Wonder. Blooms of mauve, yellow, and apricot shades are usually marketed in limited quantities. More attention is now given to Chrysanthemums, more spray blooms in bunches being available. There is also a good selection of disbudbed blooms, but large specimen white and yellow blooms are somewhat limited. Aster Amellus King George meets with a good demand for decorative purposes. Gladioli of the large-flowered varieties are still arriving in excellent condition. Lillium longiflorum is cheaper, owing to the increased supplies. Coloured L. lancifolium is more plentiful than the white type. Arums (Richardias) are the newest arrival in this department. Princess of Wales Violets are more plentiful, the cooler weather being more suited to these blooms. Scabiosa caucasica and Cornflowers are still obtainable in good condition. Choice white blooms consist of Gardenias, Lapagerias, Stephanotis, and Tuberoses. A good supply of Lily-of-the-Valley is being received from home growers, and small consignments are also being received from Holland. Business begins to improve in the pot plant department. Flowering plants remain the chief attraction, which now consists of white and pink Erics in forty-eight, sixty, and thumb pots, also a good selection of pot-grown Chrysanthemums and White Marguerites. A few Solanums and Pyracanthas are on offer. Usual varieties of Ferns and Palms are on sale, the latter being somewhat short.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Beans—	...	Marrows, tally	7 0-10 0
—Scarlet Runner,	...	Onions—	...
bushel	5 0-7 0	—Dutch	7 0-8 0
Beets, new, per	...	—English, per cwt.	8 0-9 0
doz. bun.	2 0-3 0	—Valencia	8 0-10 0
Cabbage, per tally	7 0-12 6	Parsnips, per cwt.	6 0-7 0
Celery, per doz.	...	Potatoes—	...
fans	10 0-24 0	—King Edward	...
Caul flowers, per	...	per cwt.	6 0-7 6
doz.	3 0-6 0	—others	4 0-5 6
Carrots, new, per	...	Sprouts, per bag	6 0-8 0
bag	6 0-7 0	Tomatoes, English,	...
Cucumbers, per doz.	3 0-4 0	per strike	...
—Flats, 36's, 42's	7 0-8 6	—pink	4 0-6 0
Dutch Onions	8 0-9 0	—pink & white	4 0-6 0
Endive, per doz.	3 0	—blue	2 0-3 6
Horseradish, per	...	—Guernsey	3 0-4 0
bundle	2 0-3 6	—Jersey	3 0-4 0
Lettuce, Cos, doz.	1 0-2 0	—Dutch	2 0-3 6
—cabbage	1 0-2 0	Turnips, per cwt.	7 0-8 0
Mushrooms, cups	3 0-5 0		
—Broilers	2 0-3 0		

REMARKS.—The general demand leaves room for very considerable improvement, and on the whole conditions of trade are slow. Home-grown Apples are not moving very satisfactorily, and quantities are large. Some very good fruits of Worcester Pearmain and James Grieve are selling at a satisfactory price, but there are plenty of Apples that will result in disappointing sale accounts. Too much emphasis cannot be laid upon the necessity of packing and grading all Apples. Cooking varieties are abundant and comparatively cheap. English Pears are in short supply, but there are plenty of Californian and American Pears available. Choice fruits are a fair trade. Peaches are inclined to become dearer, but Grapes and Figs are slightly easier in price. Tomatoes are in good demand, Lea Valley produce being on the short side, but Tomatoes from Jersey are plentiful and sales are brisk at good figures. Cucumbers show an improving tendency, after a slump period. Mushrooms are scarce and dear, the quantities of field Mushrooms available being negligible. Sprouts are a very good trade, but other green vegetables are meeting a poor inquiry. The Potato trade is weak with the demand confined to best sorts.

GLASGOW.

The cut flower market was devoid of any special feature during the past week and where any change in prices was recorded the movement was narrow and unimportant. Chrysanthemums bulked largely in the daily supplies, especially local grown stuff, in sprays, which sold at 5d. to 8d. for Wells White; 12 to 15 for Betty Spark; and 5d. to 7d. for Loan's pink and crimson. Disbudbed blooms were quoted as follows:—No. 1 white, 10d. to 1- for 6's; No. 2 bronze, 13 to 15; Holecot Yellow, 1- to 14; Elsie Heady, 1- to 13; and pale pink 13 to 17. Good bronze, pink and yellow were worth from 2- to 3- per doz. Special Gladioli made 2d. to 3d. per spike and Carnations fluctuated between 10 and 3- per doz. all colours. Roses were more plentiful, but they varied very considerably in size and quality. Small specimens were obtainable at 16 to 2- per doz., while the best examples of Sunburst, Ophelia, Madame Butterfly and Mme. Abel Chatenay obtained from 26 to 33. Lillium longiflorum kept firm at 46 to 56 per bunch and L. speciosum rubrum was steady at 19 to 23. Miscellaneous flower values worked out at the following averages:—Asters, 1d. to 4d. per bunch; Statice 2d. to 4d.; Sweet Peas, 1d. to 4d.; Smilax, 16 to 2-; Asparagus, small, 6d. to 8d., large, 9d. to 1-; and Gypsophila, small, 2d. to 3d., large, 5d. to 7d. Business in the fruit market was fairly brisk. Plums are nearing the end of the season and as consignments are declining in the quantity prices show a rising tendency. Victorias, which averaged 8d. per lb. earlier in the week, advanced to 10d. on Friday, while seconds made from 4d. to 7d.; Monarch, 14- (sieve); Belle Louvain, 7-; and Damsons 14-. Blackberries were cheaper at 13 per chip, English grown Grapes are very plentiful; Muscats were worth 26 to 36; Cannon Hall, 36; Alicante and Gros Maroc, 16 to 2-; while Dutch returned 1- to 12 and Guernsey 8d. to 12. English Apples brought 10/- per half barrel; Worcester Pearmain, 12- case, and Gravenstein, 16/-; and American fruit in barrels sold at 35/- for Bonham and Johnathan, and 25/- for York Imperial. Other prices were unchanged. Tomatoes at 8d. to 11d. maintained the previous week's advance; Jersey fruit, in baskets, rose to 7d. per lb., and Dutch were worth about 4d. Cucumbers remain steady at 26 to 5- doz.; Marrows, 4- to 6-; Lettuce, 16 to 26; and Cauliflower, 4- to 76.

CATALOGUES RECEIVED.

D. G. PURDIE, Glasgow.—Bulbs, etc.
ANDREW IRELAND AND HITCHCOCK, Marks Tey, Essex.—Sweet Peas and Bulbs.
JOHN WATERER, SONS AND CRISP LTD., Twyford, Berks.—Roses, Fruit Trees, Dahlias, etc.
GEORGE WATERSON AND SONS, LTD., Edinburgh.—New Competition Label.
R. MURRELL, Shepperton-on-Thames.—Roses.
DICKSON, BROWN AND TAIT, 57, Cross Street, Manchester, Bulbs.
McHATTIE AND CO., Chester.—Bulbs, Roses, fruit trees etc.
JOHN WATERER, SONS AND CRISP LTD., Twyford, Berks.—Hardy Perennial and Alpine Plants.
Foreign.
CONYERS B. FLEU, JR., German Town, Philadelphia, Pa. U.S.A.—Tree seeds, seeds of hardy perennials.
WILHELM PFITZER, Militarstrasse 74, Stuttgart, Bulbs, Roses, etc.
C. STARKE AND CO. LTD., and CHARLES AYRES, Cape Town, South Africa.—Seeds, implements, etc.
VILMORIN-ANDRIEU AND CIE., 4, Quai de la Mégisserie, Paris.—Bulbs, etc.

SCHEDULES RECEIVED.

NEWCASTLE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—Fourth Annual Chrysanthemum Show to be held in the Church Institute, Hood Street, Newcastle, on Friday and Saturday, November 13 and 14.—Hon. Sec., Mr. A. Standing, 4, Major Terrace, Felling.
LANCASTER AND DISTRICT HORTICULTURAL AND ALLOTMENT HOLDERS' ASSOCIATION.—Annual Exhibition of Chrysanthemums, Fruit, Flowers and Vegetables, to be held at Ashton Hall, Lancaster, on Wednesday, November 11th.—Joint Secretaries, J. J. Rickard and G. Thompson, 55, Coulston Road, Lancaster.
THE BRITISH CARNATION SOCIETY.—Floral Meeting in the Royal Horticultural Hall, S.W. 1, December 1.—Hon. Sec., P. F. Bunyard, 57, Kidderminster Road, Croydon.

GARDENING APPOINTMENTS

Mr. J. G. Bosant, for the past five-and-a-half years Superintendent of Cannon Hill Park, Birmingham, and previously as Gardener to LORD HASTINGS, at Melton Constable Park, Norfolk, as Superintendent of Park, Gardens, and Open Spaces at Harrogate.
Mr. W. R. Catt, for the past twenty-one years Gardener at Hodnet Hall, Market Drayton, Salop, as Gardener to J. H. JONES, Esq., Buntingsdale Hall, Market Drayton.
Mr. W. C. Davis, late of Wancote Gardens, Guildford, and previously at Prescot House Gardens, Stourbridge, as gardener to Sir James Dunn, Bart., Templeton, Rochampton, Surrey.
Mr. L. Garrett, for the past two years foreman at Wrotham Pleasure Gardens, Barnet, as gardener to the Rt. Hon. Lord Cromwell, Misterton Hall, Lutterworth, nr. Rugby. (Thanks for 2- for R.G.O.F. Box.—EDS.).
Mr. Arthur Standing, for the past fourteen years in charge of the Public park, Felling, (with a break of four years in the army), as Superintendent of Cemeteries under the County Borough of Darlington. (Thanks for 26 for R.G.O.F. Box.—EDS.).

ANSWERS TO CORRESPONDENTS.

NAMES OF FRUITS: A.L.L. 1 and 4, Winter Greening (syn. French Crab); 2, Ribston Pippin; 3, Waltham Abbey Seedling; 5, Hambledon Deux Ans. Elmley. Red Bietighemer. J.H.S. Apple Benoni. H.C. 1, Yorkshire Beauty; 2, Duchess of Oldenburg; 3, Lady Sudeley; 4, Cox's Orange Pippin; 5, Jolly Beggar; 6, Colonel Vaughan; 7, Scarlet Pearmain; 8, Lemon Pippin; 9, Emperor Alexander; 10, Cox's Pomona. F.A. 1, Maltster; 2, Claygate Pearmain; 3, Scarlet Nonpareil. J.H. 1, Golden Pippin; 2, White Nonpareil; 3, Reinette Grandville; 4, Lord Grosvenor; 5, Bismarck. E.W.S. Lane's Prince Albert. Y.Z. 1, Louise Bonne of Jersey; 2, Jersey Gratioli; 3, Doyenné Boussoch; 4, Doyenné du Comice; 5, Williams's Bon Chrétien; 6, Winter Nelis. J.R.H. 1, Five Crowned Pippin; 2, Tower of Glamis; 3, Bedfordshire Foundling; 4, Lord Derby; 5, Annie Elizabeth; 6, Bismarck; 7, Irish Peach. F.V.B. 1, Ecklinville Seedling; 2, Not in season.

NAMES OF PLANTS. S.S.S. 1, Euphorbia Cyparissias; 2, Helianthus rigidus; 3, Lysimachia punctata; 4, Cupressus pisifera squarrosa; 5, Hypochaeris radicata, a weed. D.C. 1, Cotoneaster bacillaris; 2, Platanus acerifolium (London Plane); 3, not recognised; 4, Quercus Cerris (Turkey Oak); 5, Acer Negundo variegatum (Variegated Box Elder); 6, Quercus Ilex (Holm Oak); 7, not recognised; 8, Acer dasycarpum (Canadian Silver Maple); 9, Veronica Traversii; 10, Quercus Ilex var. (variety of Holm Oak); 11, appears to be Cercis Siliquastrum (Judas Tree); 12 and 13, not recognised; 14, Ligustrum ovalifolium foliis aureis (Golden Privet); 15, 16 and 17, not recognised; 18, appears to be Symphoricarpos racemosus (Snowberry); 19, Phillyrea latifolia; 20, 21, 22 and 23, unrecognised; 24, Euonymus japonicus (Japanese Spindle Tree); 25, appears to be Symphoricarpos racemosus (Snowberry); 26, 27 and 28, not recognised; 29, Ulmus minor (Goodyear's Elm); 30, Veronica salicifolia; 31, Taxus baccata (English Yew); 32, Veronica Traversii; 33, Crataegus oxyacantha (Hawthorn); 34 and 35, unrecognised; 36, some species of Cytisus (Broom); 37, Cotoneaster frigida; 38, Euonymus japonicus (Japanese Spindle Tree); 39, appears to be Lonicera japonica flexuosa (Japanese Honey-suckle); 40, not recognised; 41, appears to be a small leaf of Robinia Pseudacacia (False Acacia); 42, appears to be Symphoricarpos racemosus (Snowberry); 43 and 44, not recognised; 45, Robinia Pseudacacia (False Acacia); 46, 47, 48 and 49, not recognised; 50, Quercus rubra (Red Oak); 51, not recognised; leaf without number, Kerria japonica (Jew's Mallow). You have far exceeded the number (six), we undertake to name at one time. E.C.M. The Lavender No. 1 is Lavandula Spica, the ordinary Lavender of gardens in its typical or most hairy and hoary form. It has been grown at Mitcham for the production of Oil of Spike, but this oil is darker and less agreeable in smell than that obtained from L. vera. The specimen sent has lost all its flowers through age. No. 2 is also a slight variety of Lavandula Spica, with greener leaves, obtained by raising it from seeds, but so far as the specimens are concerned, they do not show any other difference. The true Lavender or L. vera has very broad bracts under the clusters of flowers, especially the lowest pair. The leaves are linear or oblong, but never narrowed to a wedge-shaped base, nor become spatulate as in the garden Lavender, and they are greener. L. vera is the plant that produces the best Lavender oil at Mitcham.

Communications Received.—H. E. D.—J. W. B.—A. O.—J. J. S.—A. T. H.—N. E. B.—C. S.—W. L.—H. P.—W. M.—D. E. B.—W. S.—A. B.—H. M.—J. B.—A. O.—L. G.—H. C. S.—O.—J. C. G.—A. G.—C. G.—A. H. O'LL.—W. McR.

SITUATIONS VACANT

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When addressing Box numbers, it is essential to give the initials or pseudonym, as well as the correct number of the box.

PRIVATE.

EXPERIENCED HEAD GARDENER wanted, with three men under, for Hertfordshire, cottage and usual allowances.—Write **LADY G. BABING**, 12, Montague Street, London, W.1.

WANTED, HEAD GARDENER, for new garden on South Coast; two or three under gardeners; no glass; particulars of experience and wages required to **THE BARNHAM NURSERIES, LIMITED**, Barnham, Sussex.

WANTED, HEAD WORKING GARDENER (two under), must be good outdoors and indoors; married; age about 35.—Write, stating all particulars, to Mrs. **RICHARDS**, Cerrig Llwydion, Denbigh, N. Wales.

HEAD WORKING GARDENER for Grapenhall, Cheshire; wages 50/- weekly; cottage; write stating age, experience, references, to **W. SHIPMAN**, Cleabarrow, Windermere.

HEAD WORKING GARDENER required, thorough knowledge both in and Outdoor work, also Orchids; must be single and live in; state wages.—Mrs. **SPROSTON**, Elm House, Nantwich, Cheshire.

CAN any gentleman in confidence recommend experienced **HEAD WORKING GARDENER** over two. Seasonal help additional; married, age about 40, not more than two in family; experience of Carnations and Chrysanthemums essential.—Write **BOTTERELL**, Eddingham, Surrey.

WORKING GARDENER wanted, with help, near Pwllheli, Carnarvonshire, good references indispensable; no house available at present; single man preferred. State age, wages expected.—Apply to **GEORGE BOVILL**, Voclas Estate Office, Bettws-y-coed.

GOOD SINGLE-HANDED GARDENER wanted for Worcester, occasional help given; mainly fruit and vegetables, one greenhouse, able to milk and understand care of cow; another man kept for other duties; no cottage, but good wages and rooms if no cottage obtainable near.—Apply **WHITE-LADIES**, Worcester.

WANTED, GARDENER, SINGLE-HANDED, capable, all-round man; single; good references; state wages; Gloucestershire.—Apply **W. P. E.**, Box 67, 5, Tavistock Street, Covent Garden, W.C.2.

SINGLE-HANDED GARDENER (unmarried) not under 30, required for Wimbledon; room, light, firing provided.—Write wages, experience, S. M., Box 62, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, SECOND GARDENER for large Institution gardens; single, not under 25, with good outside experience; all outside work; 50/- weekly, no bothy.—References to **C. HANSON**, Hospital Convalescent Home, Parkwood, Swanley, Kent.

WANTED, UNDER GARDENER of two with good all-round experience; single, not under 24.—Apply **LACEY**, Woodthorpe Hall, Handsworth, Sheffield.

WANTED, UNDER GARDENER for pleasure grounds. Wages 35/- and cottage.—Write stating age, family, and full particulars, to Box G 5, Willings, 33, Knightsbridge, S.W.1.

GARDENER wanted, thoroughly understanding standing vegetables, flowers, greenhouse, fowls, etc.; state age and wages required.—Apply Mrs. **COLLINGWOOD**, Codicote, Welwyn, Herts.

GARDENER required, thoroughly experienced man with small family; House and garden provided.—**FRANK H. COOKE**, Gosberton, Spalding.

WANTED, FOREMAN for the glass dept. and hardy fruit, a good First Journeyman taking his first place would do. State wages, with bothy, etc.—**BRISTOW**, Maristow Gardens, Roborough, S. Devon.

WANTED, on or about Oct. 5, FOREMAN for rock garden and pleasure grounds, must be married and have a wide experience of alpine plants, trees and shrubs.—Apply stating experience and wages required to **PARKER**, Estate Office, Melchet Court, near Romsey.

FOREMAN and **JOURNEYMAN** required for good establishment in Warwickshire; wages £2 and 37/- per week with bothy and attendance.—Full particulars of experience and copies of references to **R. GREENFIELD**, 61, Radford Road, Leamington Spa.

YOUNG FOREMAN GARDENER, thorough experience, inside and out.—Apply Mrs. **LABOUCHERE**, Mapperton, Beaminster, Dorset.

KITCHEN GARDENER; single; age from 30-40; thoroughly experienced early and late vegetables and fruit; duty every third week; must be well recommended; wages £2 6/-, duty 5/-.—**E. C. WICKENS**, The Gardens, Tewkesbury Lodge, Forest Hill, S.E.23.

WANTED, experienced KITCHEN GARDENER; duty every third week; state wages and full particulars. **HEAD GARDENER**, Goldrood Belstead Road, Ipswich.

CAN any gardener recommend good **KITCHEN GARDENER**, married, no family; 40/- and cottage.—Apply, **F. PEARCE**, Great Stotley Gardens, Haslemere.

WANTED, MAN experienced with hardy plants, for pleasure grounds, in gardens where 8 are kept; wages 40/-, bothy, etc.—**E. WISE**, The Gardens, Oakwood House, Otterbourne, Winchester.

WANTED, good GARDENER and WIFE as cook, live in, for Hertfordshire district.—Write, giving full particulars, ages, experience, wages, to **LONDON**, 91, Bishopsgate, E.C.2.

WANTED, early, middle-aged COUPLE without family. Man to be alternatively qualified in greenhouse work or as Outdoor Gardener or estate worker; required to board two stable lads; cottage, garden; wages 36/-.—Apply **UFFOLD**, Peaslake, Gomshall, Surrey.

GARDENER, experienced Outdoor, and **WIFE** required at Hampton-on-Thames, no children, wife to do all domestic work of small modern house and cook for young married couple at week-ends. Both to live in, without board. State wages. Good references indispensable.—Write, **ERNEST GARDNER**, 1, Ashley Place, Westminster.

WANTED, middle aged single MAN, life experience garden work.—Write **M. H.**, Box 56, 5, Tavistock Street, Covent Garden, W.C.2.

WANTED, single young MAN, must be good grower of Chrysanthemums, Carnations, etc.; comfortable lodgings; state wages.—Apply, **WM. GREEN**, Coverwood Gardens, Ewhurst, near Guildford, Surrey.

WANTED, experienced young MAN, chiefly for herbaceous borders and Roses. State wages, no bothy, can lodge on place.—Apply **HEAD GARDENER**, Greulands, Henley-on-Thames.

WANTED JOURNEYMAN for the pleasure grounds, able to take duty, good wages and bothy to suitable applicant.—Apply **H. BARSON**, Rangemore Gardens, Burton-on-Trent.

WANTED, on or about Oct 5, JOURNEYMAN. Inside, with knowledge of Orchids; wages 32/- to 35/- per week according to experience; single man required; bothy provided and allowance for Sunday duty.—Apply with copies of references to **PARKER**, Estate Office, Melchet Court, near Romsey.

WANTED, JOURNEYMAN, for fruit and plant houses, state age, experience, wages required, with bothy, veg., etc.—**THOS. WILLIAMS**, Petwood Lodge, Woodhall Spa.

WANTED, JOURNEYMAN, charge of houses; not under 24; must be well recommended; 38/- per week, duty 5/-.—Particulars **HEAD GARDENER**, Mostyn Hall Gardens, Mostyn, Flintshire, N. Wales.

JOURNEYMAN, under glass, age 22-24 years; well up in fruits, plants, cucumbers and tomatoes; must be well recommended.—State wages, including bothy, to **J. MALTBY**, Denton Manor, Grantham.

WANTED, good JOURNEYMAN for kitchen garden, fruit and herbaceous border, particulars of experience and wages required with bothy, etc.—**F. BRINCOMBE**, The Gardens, Cross Oak, Berkhamsted, Herts.

JOURNEYMAN wanted for pleasure grounds, must be energetic, keen on his work; 32/- with bothy, attendance, 4/- for duty.—**J. AYERS**, The Gardens, Sparrows Herne Hall, Bushey Heath.

WANTED, experienced JOURNEYMAN. Inside and Out; used to duty; state wages with bothy to—**G. BRYANTON**, The Gardens, Greenways, Sunningdale.

WANTED, strong LAD, general garden work under gardener and assist in stables.—Write full particulars, **Lady McMAHON**, Beechwood, nr. Petworth, Sussex.

TRADE.

PROPAGATOR.

WANTED, reliable man as hard-wooded PROPAGATOR, must have had first-class experience, permanent post for right man.—Send testimonials, particulars of experience, age and wages, and if married or single to **S. BIDE and SONS, LTD.**, Farnham, Surrey.

WANTED, ROSE FOREMAN; must have had good experience in growing in quantity and be good salesman.—Write stating all particulars as to age, wages, if married or single, to **S. BIDE & SONS, LTD.**, Farnham, Surrey.

FOREMAN wanted for first class landscape work, experienced in working to drawings, building dry stone walls, flagging, etc.; full particulars and wages required.—**HODSONS**, 58, Castlegate, Nottingham.

WANTED, LANDSCAPE and ORNAMENTAL GARDENER to take charge if required. References, and state wages.—**THEARLE & CO.**, Alleyns Nursery, Lordship Lane, Dulwich, S.E.

GOOD MEN for Landscape Department.—Full particulars to **CARTER PAGE & CO. LTD.**, 52-53, London Wall, London, E.C.2.

WANTED, experienced MAN for formal garden work and dry walling in Sussex.—Apply **PIPERS**, Bishop's Road, Paddington.

MASONS required, those acquainted with garden walling and paving preferred.—Experience and wages required to **WM. WOOD & SON, LTD.**, Taplow.

WANTED at once, smart SALESMAN for floral department; expert florist and decorator, with knowledge of nursery stock; single man preferred; state age, experience and salary required.—**BALCHIN**, 87, Western Road, Brighton.

WANTED, an experienced ASSISTANT for execution of orders and to assist on counter; permanency to right man.—Apply with full particulars of experience, age, and wages required **GEORGE COOPER AND SON, LTD.**, Seed Merchants, Bedford.

WANTED, Youth as JUNIOR in seed and flower departments; state age, experience and salary required.—**BALCHIN**, 162, Church Road, Hove.

WANTED, a smart man as REPRESENTATIVE for Seed and Potato business, connection in other districts an advantage.—Apply stating age, salary required, and full particulars of experience.—**GEORGE COOPER AND SON, LTD.**, Seed Merchants, Bedford.

SHOP MANAGER wanted, to take charge of our Manchester depot. Applicants must have a thorough knowledge of the Seed, Bulb and Nursery Trade, capable of control of staff and successful management; salary and bonus on profits; state full particulars of experience, salary required, and when at liberty.—**CLIBRANS LTD.**, The King's Nurseries, Altrincham.

GARDENER required for West-end furnishing contracts; thoroughly experienced; good references required.—Apply **ROBERT GREEN, LTD.**, 28, Crawford Street, W.

THE

Gardeners' Chronicle

No. 2023.—SATURDAY, OCTOBER 3, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 51.9.

ACTUAL TEMPERATURE—

The *Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, September 30, 10 a.m. Bar, 30.5. Temp, 63°. Weather, dull.

Weather and Plant Diseases.

To the observant gardener it needs no demonstration that meteorological conditions often have the casting vote in determining whether or no plants shall be attacked by disease. However, during the recent September spell of bright days and cold nights, visited his Rose garden after an absence of a week or so, saw the young growths of plants previously clean covered with mildew. The relation of late blight of Potatos to weather conditions is also so well-known as to need no emphasis. The influence of weather on the effective infection of plants by fungous and insect parasites being granted it becomes a matter of great practical and scientific interest to disentangle "weather," that is, the sum of meteorological conditions, into its elements—humidity, temperature, solar radiation, etc.—when in excess or defect—come into account as aids and abettors of disease. To some extent this has been done, but much yet remains to be done and hence Dr. Butler, the Director of the Imperial Bureau of Mycology, Kew, has performed a useful service in raising and discussing this important subject.* The examples which Dr.

Butler gives suffice to show that the conditions which favour the outbreak of one kind of disease may be by no means the same as those which favour another. For example; excess of moisture in the air provides favourable conditions for Late Blight of Potatos, whereas drought and bright sunshine facilitate the growth of Apple and similar mildews. Nor, indeed, is this surprising, for the full vigour of a plant and its power of "growing away" from a disease are manifested only when the meteorological factors are neither excessive nor defective. An Oak wood in a hot summer will convince anyone that sunshine favours the development of mildew. Among the sun-exposed edges the mildew powders the leaves so that they look as though all the white dust of a road had been blown upon them. In the deeper shade the mildew is less in evidence. Needless to say in this case both sunshine and exposure must be brought into the debit account. Dr. Butler gives many interesting and striking examples of the discovery of the precise meteorological conditions under which a given disease will break out. One of the earliest and most striking is that made by Dr. Balls in Egypt. The Sore-shin disease (Rhizoctonia Solani) often does disastrous damage to the seedling Cotton plant. Cotton is sown in Egypt from the end of February to May. In the earlier period growth of the seedlings is relatively slow. Later, with a high soil temperature, it is much faster. The fungus, like the Cotton plant, grows best at a higher temperature, but if a temperature of 37° C. is reached the fungus stops growing. It apparently poisons itself. Therefore inasmuch as in late sowings the temperature reaches near to this critical point although the fungus infect the Cotton plant it fails to damage it; for two reasons—First, by its exuberant growth the fungus produces an auto-toxin which kills it. Second, by its exuberant growth the Cotton plant is able by making corky walls to imprison, isolate and destroy the fungus. The devourer is devoured. The problem of the influence of environment on the plant may also be investigated—as Dr. Butler points out—in another way, mainly by ascertaining the behaviour of plant and parasite under different conditions of climate. Where, as in India, and in the United States and other large countries, one and the same crop is grown over a large area, the incidence of this or that disease may be observed and correlated with the climate. A very pretty example of this kind of investigation is provided by the Seedling-blight disease of Maize and Wheat caused by Gibberella Saubinetii. The disease is severe in the United States, especially in the Middle West. The reason why the Middle West bears this double burden of infection has been found to be that Maize resists the infection when the soil temperature is high, but Wheat resists only when the temperature is relatively low. At seed-sowing time the Middle West cannot apparently provide a temperature low enough for Wheat nor high enough for Maize. Hence neither plant can thicken up its seedling cell walls fast enough to box out the parasite. There can be no doubt but that the thorough investigation of plant diseases in relation to meteorological conditions will prove of the greatest benefit to cultivators. Already in France the Meteorological Station at Montpellier is able to send out notification to the wine-growers of the date when they may expect an outbreak of disease, so that spraying may be done in

time. It is therefore satisfactory to know that the Ministry of Agriculture of this country is doing all that is possible to encourage the collection of meteorological data bearing on crop production. Our problem is in many ways more difficult than that of our continental neighbour, for though Great Britain is small in size its capacity for meteorological diversity is both capricious and extensive.

The Potato Crop.—The acreage of Potatos on agricultural holdings in England and Wales this year is 493,000 acres, or 41,000 acres more than in 1924. Early Potatos gave light yields, the tubers being small as a result of the spring drought, but main crops have made good progress during the past two months and promise yields little, if at all, below the average. The probable total crop is estimated at 2,856,000 tons, or 160,000 tons more than last year, and practically 100,000 tons more than in 1923. In Scotland also, the acreage of Potatos has been increased, the total of 141,000 acres being 2,700 acres greater than last year. The present prospects of the crop are very favourable on the whole, and somewhat over average yields are expected in most districts. The average yield per acre in Scotland is about six-and-a-half tons per acre, and the total production may therefore be forecasted at somewhat over 920,000 tons. It would appear, therefore, that the total production of Potatos in Great Britain this year will be round about 3,800,000 tons, against 3,540,000 tons last year and 3,580,000 tons in 1923. This prospective supply of home-produced Potatos is not excessive for the country's needs, so that, unless the yield turns out to be much better than appears likely at present, there seems no reason to anticipate unduly low prices during the coming autumn and winter. In the first four months of this year imports of Potatos were much heavier than usual, some 175,000 tons being received, the great bulk being old tubers. During this period Potatos were very dear, being from two to two-and-a-half times the pre-war price. From May to July, when imports were mainly new Potatos, the consignments were little heavier than in 1924, viz., 263,000 tons in the three months against 255,000 tons in the corresponding months last year, but although there was a sharp decline in August to 22,500 tons, the imports in that month were more than double those of August 1924, though little in excess of August, 1923.

Gardening Adventures.—On Tuesday, October 6, Mr. Compton Mackenzie will deliver a lecture at the Garden Club, 9, Chesterfield Gardens, W.1, on his "Gardening Adventures." The lecture will begin at 9 p.m.

A New International Dictionary of Agriculture.—The International Institute of Agriculture at Rome is bringing out a new polyglot agricultural dictionary, or glossary, in which a translation of each word is given (where it exists) in twenty four different languages, the explanations, however, appearing only in English and French in parallel columns. The idea is a good one, and the book should prove useful; only the first thirty-two pages have as yet been compiled, and are being sent round to various journals for suggestion and criticism. The first section begins with the prefix "A" and ends with "Acide cyanhydrique"; an average of about a dozen lines of explanation is given with each word. The present format is ten-and-a-half inches by seven-and-a-quarter inches, each page divided into two columns; but we understand that the present specimen is in the nature of a *ballon d'essai*, and that any or all of its features may be modified as a result of criticism or suggestions received. One disadvantage is that the alphabetical order observed applies only to the French names; unless the French name is known, therefore, it will not be possible to find anything except by chance, unless a supplement in the shape of a vocabulary is issued for each of the twenty-four nationalities for whose use the book is destined.

* "Meteorological Conditions and Plant Diseases." *International Review of the Science and Practice of Agriculture*. International Institute of Agriculture. April-June, 1925.

Appointment at Kew.—Mr. V. S. Summerhayes, B.Sc., has been appointed by the Ministry of Agriculture to be an assistant in the herbarium of the Royal Botanic Gardens, Kew.

A Select List of Roses.—The very many new Roses raised in recent years renders the task of selecting the best varieties a very difficult one, and growers, especially amateurs, will find the select list of Roses published by the National Rose Society*, brought up-to-date for 1925, of very great value. Necessarily, several of the old favourites are omitted from the present list and some of the newer ones included. The varieties are placed in alphabetical order with the section to which each sort belongs, the name of the raiser, the date of introduction, and particulars as to the colour. The purposes for which the particular variety is suited are given, and the method of pruning to be adopted indicated by means of numbers which have reference to the section on pruning Roses at the end of the book. The section dealing with selections of Roses for special purposes is not the least valuable portion of this useful work, and, as the lists are drawn up by experts, the grower will be able to find all the very best sorts for his purpose. For example: those who desire to grow only fragrant Roses will find a valuable list on page 26 under Selection 12, "Very fragrant Roses"; the best varieties for forming a hedge, for planting in special situations, for covering pillars, for growing in standard or half-standard forms, etc., are enumerated in these various selections.

National Sweet Pea Society.—The annual general meeting of the National Sweet Pea Society will be held at Essex Hall, Essex Street, Strand, London, W.C.2, on Tuesday, October 20, 1925, commencing at 2.30 o'clock.

Drawings of Ngamiland Plants.—The series of water-colour drawings made by Mrs. Lugard of the flora of Ngamiland, has been presented by the Bentham Trustees to Kew. The collection consists of 245 drawings, many of which are of special value in showing the fleshy structures, which cannot be satisfactorily preserved in specimens. Beside showing the general structure of the plant, the paintings usually give detailed analyses of the flowers and often also of the fruit. The *Kew Bulletin* states that these drawings will form a useful supplement to the specimens collected by Sir F. and Major E. J. Lugard, and a valuable addition to the Kew collection, especially as many are species not figured before, and are accompanied by notes on the plants.

Gardeners' Royal Benevolent Institution.—A special general meeting of the members of The Gardeners' Royal Benevolent Institution will be held at "Simpsons," 101, Strand, London, on Tuesday, October 20, 1925, at 2.30 p.m., for the purpose of electing a new Trustee of the Institution.

Spalding Potato Show.—This exhibition, under the auspices of the Holland (Lines) County Council will be held at Spalding on Thursday, the 29th inst. The agricultural Institute, Kirton, will be largely identified with the show, and will stage a number of exhibits of interest to Potato growers, including varieties of Potatoes with their yields in 1925, also cooked tubers of the varieties; results of various potassic and phosphatic manures on Potatoes; an exhibit of Wart Disease; results of manuring early Potatoes, etc. Most of the classes are open only to growers in Lincolnshire, but several are open to all, including one for a one hundredweight bag of ware Potatoes, of any variety for which a challenge cup valued fifteen guineas is offered by Mr. J. S. Daniels, together with money prizes of three guineas, two guineas, and one guinea, respectively, and another in which similar money prizes are offered for a bag of ware Potatoes grown on black land. There are also classes open to traders in which valuable trophies, medals, etc., are offered. The secretary is Mr. J. C. Wallace, Agricultural Institute, Kirton.

*Select List of Roses and Instructions for Pruning. National Rose Society, Secretary, Mr. Courtney Page, 28, Victoria Street, S.W.

Mr. Arthur Keeling.—It is some twenty-five years ago since Mr. Arthur Keeling became associated with the public parks and gardens of Southend, at a time when the only open space in the borough was Southchurch Park, this having been given to the town by the late Mr. J. C. Ingram and Mr. T. Dowsett. This particular park was originally a piece of low-lying, marshy land, but it is now, thanks largely to Mr. Keeling's efforts, one of the most beautiful open spaces in the borough, and includes a splendid cricket field, on which games have been played by the Australian cricketers, and by Essex County in competition with some of the other counties. Some eighteen years ago the Southend Corporation purchased Chalkwell Park, which was then a country house and farm, and later Mr. R. A. Jones made a gift of The Shrubbery, in Royal Terrace, to the Borough. This gentleman also presented the town with what is now known as Priory Park, a charming old-world place for long the residence of the Scrutton family. Other additions to the open spaces of the borough include a children's sports ground



MR. ARTHUR KEELING.

and a Victory Sports ground, both the gifts of Mr. Jones, the former in memory of his wife, the latter given after the war as a sports ground for men. The latest acquisition is the Belfairs estate of 290 acres, and this with the other parks and small areas, such as bowling greens, miniature golf courses, etc., have a total area of 515 acres, the whole of which is under the skilful management of Mr. Keeling. In addition, he is responsible for some nine miles of boulevards, 16,000 street trees, 100 grass tennis courts and 12 hard tennis courts. Other duties that fall to Mr. Keeling are the care of the public schools' playing grounds, which now total some fifty acres. That Mr. Keeling is a master hand in the management of public parks and open spaces is shown by the excellent condition in which all these open spaces are maintained by him, and it is the unanimous opinion of the residents that never before have either Chalkwell Park or Priory Park been more beautiful than during the present season. Mr. Keeling is one of the busiest men in the town, for he is always initiating new schemes for the beautifying of the borough, and constantly adding to the facilities for sports. Just now, he has a big programme of winter work on hand in laying out an eighteen-hole golf course on the Belfairs estate, the planting of a dozen new roads with street trees, adding a fresh area to Southchurch Park, making provision for three new bowling greens at Priory Park, beautifying the cliffs along the sea front by a scheme of planting, and enlarging the cemetery in the

Sutton Court Road. In addition to this, he has added to the amenities of the public housing scheme by planting thousands of shrubs and trees, and turfing some of the closes, and there is still a great deal more to do. It was our pleasure, recently, to inspect the stock of Chrysanthemums, numbering 1,100 plants at Chalkwell Park, and 200 at the Priory Park, which will be displayed in the large glass-house at the former place during the season, and the promise of a fine display of flowers is exceptionally good. Mr. Keeling propagates the whole of the bedding plants required for the public parks and gardens, so that it will be seen his office is no sinecure. That his efforts are appreciated is apparent by the esteem with which he is held not only by the public authorities, but also by the townsmen of this large and growing borough, whilst the regard with which he is held by the staff under him, which numbers 100, is shown by the many presents which he has received at their hands on the occasions of the annual outings of the Public Parks Department.

Mr. W. A. Cook.—The many friends of Mr. W. A. Cook will be pleased to know that he has recovered from his severe illness and is living in quiet retirement on the Whiteley Estate at Walton-on-Thames. Mr. Cook's life was dispirited by his medical adviser in 1923, but, although unable to follow his vocation as a gardener, he is much better and was present at the Royal Horticultural Society's fruit show on Wednesday last and paid a visit to this office. Mr. Cook was gardener at Leonardslee for many years and subsequently at Drynham, Walton-on-Thames. Previously to these appointments he was for over twelve years gardener at Compton Bassett.

The Deepdene Chestnuts.—The construction of a new road between Reigate and Dorking is likely to involve the destruction of many of the famous Sweet Chestnut trees in Deepdene Park, which, according to a local paper, existed in the time of William the Conqueror. An effort to save these old trees is being made, and a deputation, which included Lord Farrar, and representatives of the National Trust, the Scape Society and the Commons and Footpath Society, waited on the Ministry of Transport in the early part of the year, and were sympathetically received by the minister. Lt.-Col. Wilfrid Ashby, but nothing has resulted, and in a letter to *The Times*, Sir William Lawrence makes a further appeal to save from destruction these venerable trees which he describes as "A treasure of Surrey."

Select Sweet Peas.—In the up-to-date selection of Sweet Peas, prepared by its Floral Committee and now issued by the National Sweet Pea Society, the following varieties are considered to be the best in their respective colour sections:—Bicolor (light), Bonfire; bicolor (dark), Magic; blue, Bluebird; blue (light), Colne Valley; blue (dark), Commander Codsall; blush (pink), Valentine; blush (lilac), Elegance; cerise (pale), Lucifer; cerise (deep), Charming; cerise (scarlet), Grenadier; cream, Matchless; cream-pink (pale), Fair Lady; cream pink (deep), Picture; crimson, Charity; fancy, Angèle; flushed, Faerie Queen; ivory, Ivory Picture; lavender (rosy), R. F. Felton; lavender (pale), Wembley; lavender (lilac), Powerscourt; lilac, Mascotts Helio; marbled and watered, Birdbrook; maroon (red), Splendour; maroon (dark), Warrior; mauve, Lady Evelyn; orange, Tangerine Improved; orange, (deep), Wizard; orange (pink), George Shawyer, orange (scarlet), Mammoth; picotee edged (cream ground), Jean Ireland; picotee edged (white ground), Annie Ireland; pink (pale), Supreme; pink (deep), Hawlmark Salmon; purple, Purple Perfection; rose, Sunset (Bolton's); salmon (orange), Fordhook Orange; Scarlet, Hawlmark Scarlet; and white, Edna May Improved. A list of "too-much-alike" varieties is also issued in the same publication, for the guidance and convenience of exhibitors, and not more than one of the bracketed varieties are permitted to be shown on the same competitive stand at any exhibition of the N. S. P. Society, unless otherwise stated.

R.H.S. Journal.—The *Journal of the Royal Horticultural Society* for September (Vol. L, Part 2) contains several interesting papers beside the records of trials, book reviews and proceedings of the Society's Committees. Perhaps the most valuable contribution to the practical gardener is the article by Mr. T. Stevenson on "The Forcing of Bulbous Plants," this being an address he delivered to the Wisley students. Before Mr. Stevenson became associated with market growing he was one of the most successful private gardeners in this country, so that with his double experience, that of a private gardener and market grower, his knowledge of the subject is almost unique. The paper is full of valuable details which only one with first hand experience would be acquainted with. He deals with Narcissi early single and double Tulips, Darwin Tulips, Irises and Gladioli under glass. One of the most valuable items of the paper is the list of varieties of Tulips, Daffodils, Irises, Gladioli and Hyacinths suitable for forcing.

Tribute to Sir William Thistleton-Dyer.—*Nature*, for September 26, in referring to the completion of *Flora capensis* pays a well-merited tribute to the activities of Sir William Thistleton-Dyer while Director of the Royal Botanic Gardens, Kew, but more especially of the work he has done for the British Empire in advancing the knowledge of its botanical riches in the domain both of economic and systematic botany. During Sir William's many years of office at Kew, two works with which he was especially associated are the *Flora capensis* and the *Flora of Tropical Africa*. *Nature* states that the work entailed in the naming and collecting of the arrangement of these two great works would, it might well be thought, be sufficient to occupy the full attention of the Director at Kew, but Sir William found time to do much else, including the initiation of the *Kew Bulletin of Miscellaneous Information*, and the placing of the museums in order so that the objects were displayed to the best possible advantage. The eulogy sums up Sir William Thistleton-Dyer's activities in these words: "Such services as these, and many other activities displayed by Sir William Thistleton-Dyer in various botanical enterprises, have rarely been surpassed in value and importance by the labours of any other public servants to whom the British Empire owes so much."

Flowers in Season.—From Messrs. Allwood Bros., Haywards Heath, we have received boxes of flowers of their varieties of perpetual-border Carnations, and also of *Dianthus Allwoodii*. The flowers were not of the highest quality, but they were very delightful in form and colour, and served to demonstrate the continuous-flowering habit of these *Dianthi*. Two of the newer varieties of *D. Allwoodii*, i.e., *Nora* and *Phoebe*, appear to be exceptionally vigorous, but we were most pleased with the striped, perpetual border Carnations which Messrs. Allwood have bred from the old-fashioned flakes and bizzars. Of these the most notable included *Sussex Ray*, purple and grey; *Sussex Tricolour*, purple and pink on a white ground; *Sussex Speckle*, old rose, flaked with crimson; *Sussex Flake*, white, with scarlet flakes; and *Sussex Lady*, heavily flushed with red on white ground. All the flowers were gathered from the open ground on September 29, and gave ample evidence of the continued interest Messrs. Allwood Brothers are taking in the Carnation family, especially with a view to extending the flowering season, and obtaining sturdy, free-flowering varieties of value for garden decoration.

Appointments for the Ensuing Week.—Sunday, October 4: Wakefield and North of England Tulip Society's meeting. Monday, October 5: National Chrysanthemum Society's Floral Committee meets. Tuesday, October 6: Royal Horticultural Society's Committees meet; Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, October 7: Royal Agricultural Society's Council Meeting; National Viola and Pansy Society's meet-

ing. Friday, October 9: Royal Horticultural of Ireland Council meeting. Saturday, October 10: British Mycological Society's autumn foray for London students.

"Gardeners' Chronicle" Seventy-five Years Ago.—*First Class Seedling Geranium: Rundle's Beauty of Montpellier.*—This beautiful flower was exhibited at the Chiswick Horticultural Fete, May 18, 1850, and was very much admired, and was also noticed by all the leading publications; a description of it will be found in the *Gardeners' Chronicle*, by Professor Lindley; in the *Florist*, by Mr. Beck; and in the *Gardeners'*

petals. It has a rich and velvety crimson maroon spot, beautifully tinted, and shaded off to the ground colour. It is an extra-sized flower, of good shape and substance, like Lyne's celebrated flower, Forget-me Not. In fact, it has very much the habit of this sterling flower, being of a short, robust growth, and throws its fine flowers well above the foliage." Further description would be unnecessary, more than for us to say, that we are certain it will give the most complete satisfaction to every customer, and we can recommend it with the same confidence that we introduced Lyne's

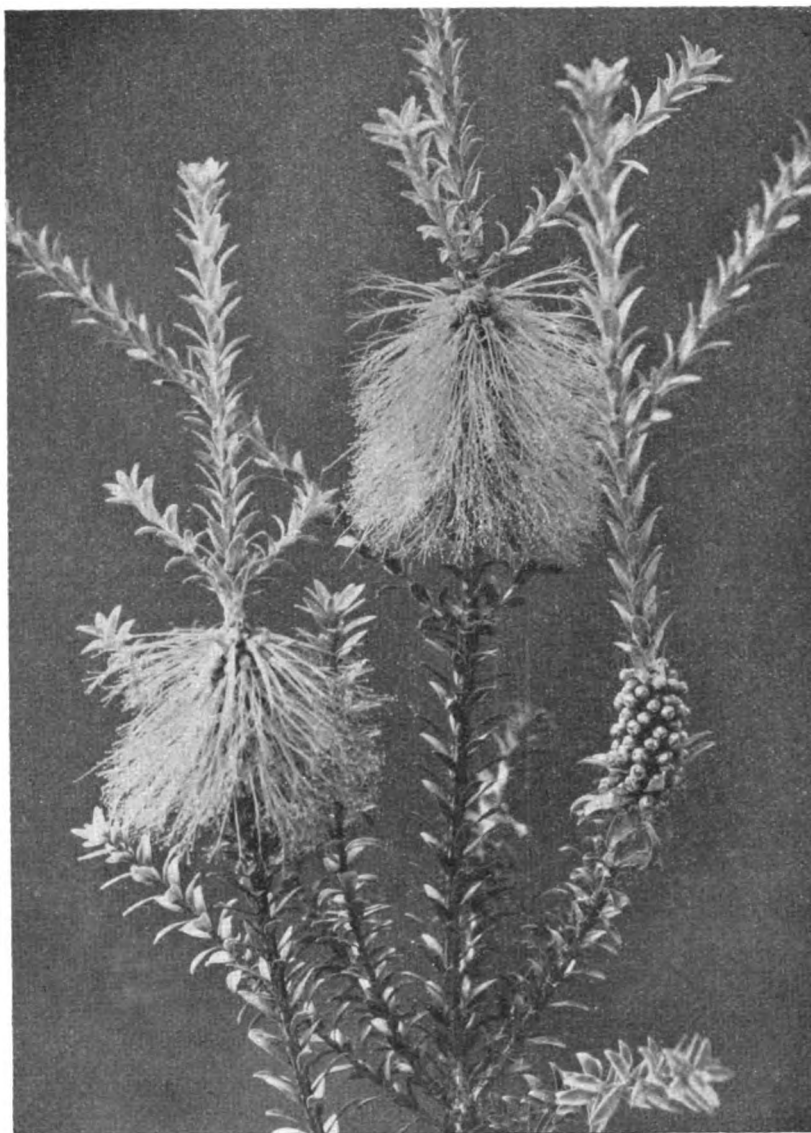


FIG. 104.—BEAUFORTIA DECUSSATA.

R.H.S. Award of Merit, September 22. Flowers light yellowish orange. Shown by Rev. A. T. Boscawen, Ludgvan Rectory, Cornwall (see p. 254).

Magazine, by Mr. Glenn; all of whom speak in the highest terms of praise. Two seedling plants were also exhibited at the Royal Devon and Cornwall horticultural Show, two days previous to the Chiswick Show, and won a seedling prize. It was noticed by the editor of the *Plymouth Herald*, and as it gives a good description of it we extract it: "One of the principal attractions at the Show was a magnificent seedling Geranium, raised by William Rundle, Esq., Montpellier House, Devonport, and for which an extra prize was awarded. It attracted the attention of every florist, and was undoubtedly one of the best flowers in the room. The ground colour is a bright pink, with a pure white centre extending over one-third of the upper

Duke of Cornwall, Forget-me-Not, and Arnold's Virgin Queen. These are all sterling flowers, and are much admired even at the present day. Price, 20/- each. One given over three to the trade. Good strong plants will be ready about the middle of October. Apply to William E. Rendle and Co., Nurserymen, Plymouth. Our new descriptive catalogue of Geraniums, Azaleas, Camellias, Fuchsias, etc., is just published, and can be had on application for one penny stamp. *Advertisement in Gard. Chron.*, October 5, 1850.

Publication Received.—*The Trianon of Marie-Antoinette.* By Pierre de Nolhac. T. Fisher Unwin, Ltd., 1, Adelphi Terrace, W.C.2. Price 12s. 6d. net.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Miltonias.—Brazilian Miltonias, which include such species as *M. Regnellii*, *M. Binotii*, *M. spectabilis* and its variety *Moreliana*, will be passing out of flower, and should be afforded just sufficient water to prevent any undue shrivelling of the leaves and pseudo-bulbs. *M. Clowesii* and *M. candida* are developing their flower spikes, and after they are cut the plants should receive similar treatment to the Brazilian species. At the present period these plants are very subject to attacks of red spider, and as a precaution against this pest the leaves should be sponged occasionally with tepid soft water. *M. Roezlii* is now starting into new growth, and fresh roots are pushing forth from the base of the plant. Any necessary re-potting may be done at this stage. Water should be applied sparingly to the roots all Miltonias through the winter. Plants of *M. vexillaria* and its many hybrids that may have been cultivated in the cool house during the summer will be benefited by being grown in a slightly higher temperature.

Cymbidium.—Both species and hybrids of *Cymbidium* are showing their flower spikes and will require a plentiful supply of water to the roots. Others that have nearly completed their growths and are not yet showing their inflorescences should be kept on the dry side, otherwise growth will commence, and the plants will fail to bloom.

Cattleyas.—At this time of the year many plants of *Cattleyas* and *Laelio-Cattleyas* will have completed their new pseudo-bulbs, and should be carefully examined for the presence of scale and other insect pests, which are more likely to be found on the old pseudo-bulbs than on those made during the present season. Where loose skin exists on the plants it is advisable to examine it on the under surface as it forms a favourable hiding place for pests. The pseudo-bulbs should be sponged with a suitable insecticide, which will usually remove most of the scale insects, although sometimes a small, stiff brush is necessary, but great care must be taken not to damage the buds. The insects are frequently to be found on the apices of the old pseudo-bulbs, in the crevices formed by the remnants of the removed flower sheaths, and from such places they may be removed by means of a pointed stick. These Orchids may still be potted, provided they are developing new roots. Great discretion is necessary in the application of water to the compost of newly-potted Orchid plants.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Irises.—Dutch, Spanish and English Irises are splendid subjects for early summer, and give a wealth of delightful flowers in all shades of colour. Planted at this time in well-prepared beds and given good attention, they may be left undisturbed for several years, and provide regularly abundance of material invaluable for cut flowers at a time of the year when these are none too plentiful. The Flag Irises, too, which have become, in recent times, an exceptionally extensive and valuable race of plants, may also be planted in October. They flourish in all sorts of different soils and positions, but dislike being disturbed, hence, in choosing a place for them, the main thought should be that they can be left there for several seasons.

Bulbs.—The grower who wishes to look forward with confidence to success will have planted already the small bulbs, such as Snowdrop, Squills, Crocuses, Fritillarias etc., and now the larger bulbs such as Hyacinths,

Narcissi, Tulips, Iris, etc., may worthily claim his attention, for there is no month so favourable as October for planting the bulbs. It is a great mistake to suppose that because a bulb has been specially grown and prepared for flowering and can flower in a glass of water without soil, that the nature and condition of the soil for planting matters nothing. It is true that well-grown bulbs contain the embryo flower, and if given water it is more or less independent of soil, but the embryo flower cannot develop to its highest degree of opulence without good cultivation, and the sites intended for the plants should be thoroughly prepared to a reasonable depth, not forgetting to work a liberal sprinkling of bone-meal into the surface soil before planting. The depth of planting is often a vexed question, but admits of no rule of thumb statement. It depends largely on the consistency and nature of the soil. On heavy, retentive soils, large bulbs may be sufficiently covered at three or four inches, while on light, sandy soil, six or eight inches may not be too much.

Plants in Frames.—The stocks of young plants intended for next season's bedding, which are to be wintered in frames will now call for increased care on the part of the cultivator. Damp is often as great an enemy to such plants as cold, and it will be well to keep all decaying foliage removed, and to do all that is possible to prevent stagnant conditions in the frames. For this reason air should be admitted to the fullest extent whenever the weather is favourable, removing the lights entirely when opportunity affords, for this will not only ensure the frame being dry, but make the plants hardy, and enable them to winter more satisfactorily. When frost occurs it may be necessary to employ a little fire heat but be sparing with artificial warmth, as plants in frames should not be coddled. If time and labour permit it would be an advantage to wash the glass, for every available portion of sunlight is necessary to the plants well-being in winter. Plenty of light means stocky, robust growth.

General Work.—October is a month of feverish activity in all departments of the garden, but whereas in some departments these activities consist in the completion of various tasks and the enjoyment of the realisation of past efforts, such as the harvesting and storing of crops and the housing of nearly mature plants, those of the flower garden are largely of schemes for next year's display, and the looking forward to future results. Every gardener begins these schemes at this season fortified with various notes recording past failures, fully determined to make the next year the most successful he has experienced. It is an old garden maxim that doing things in good time is the secret of success, and the flower gardener who treats this month as his spring of the year and uses it as his season for preparing and planting is laying the foundation of that success which can only come from intelligent anticipation.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Bulbs.—The earliest potted bulbs of *Polyanthus*, *Narcissi*, *Freesias* and *Lachenalias* will have made considerable progress. Those bulbs which have been plunged in fibre should be examined weekly, and any which have well-filled the pots with roots and have made a couple of inches or so of top growth, should be removed from the fibre into a cold frame, afforded a thorough watering if the soil in the pots is found to be at all dry, and be shaded for a few days to gradually accustom the blanched growth to strong light. If required for November flowering, a batch of the *Polyanthus* *Narcissi*, which may have been fully exposed to light for a fortnight, may now be placed in gentle warmth on a shelf near to the roof-glass. *Freesias* and *Lachenalias* that have started freely should also be placed as near to the roof-glass as possible, in a cool, airy, house to prevent the growth from becoming drawn. Care must be exercised

during the early stages of growth to apply water to the roots only when it will be certain to pass through the soil readily. An effort should be made to complete the potting of all bulbs intended for spring forcing during this month.

Housing of Plants.—Cyclamens which have been grown in cold frames or pits during the summer should now be moved into their winter quarters. The best accommodation for them is that afforded by a span-roofed house having continuous roof and side ventilators on both sides of the house. Avoid overcrowding, allowing each plant, if possible, to stand well clear of its neighbour.

Richardia africana.—Plants of *Arum Lily* which were potted up as advised in a previous calendar should now be placed under glass in a light house to avoid risk of damage from early frosts. The plants may easily be induced to flower by Christmas if desired, by very gentle forcing later.

Cinerarias.—The latest batches of *Cinerarias* should receive their final potting this month. Afford the plants the coolest possible treatment in frames or pits so long as it is possible to protect them under these conditions against likely damage from frost. Winter accommodation in a frame or low pit having a circuit of hot-water pipes is preferable to that of large and airy houses.

Nerines.—The flower spikes of the *Guernsey Lily* will be putting in an appearance, upon which, a little water may be applied to the pots, sufficient for the time being, to enable the bulbs to plump up.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Peaches and Nectarines on Walls.—So soon as these trees are cleared of their fruits, cut away all exhausted and fruitless branches to allow light and air to enter the trees and to hasten the ripening of the current year's growths. If aphides have attacked the young growths during the ripening season, the tips of the young shoots should be dipped in a nicotine insecticide, according to the strength advised by the makers, and the tree may be syringed with the same. Where red spider is present the trees should be syringed heavily with clear water on every favourable opportunity; this will keep the spider in check and also help to keep the trees clean. Old and exhausted trees should be cut down and burnt, the walls thoroughly cleansed, and either treated with an insecticide or coated with hot lime. Work the insecticide and the lime well into the crevices to destroy the eggs as well as the insects. Before planting new trees, take away all sour and exhausted soil from the border, and substitute good fibrous loam, freshly dug if possible, mixed with wood-ash and old mortar rubble; if unable to obtain old mortar, add lime in the same proportion, with small broken crocks from the potting shed. If the loam is inclined to be heavy, decayed leaves may be added at the rate of one barrow-load to five barrow-loads of loam. This, with a sprinkling of half-inch bones will provide a good compost. Mix the materials in a heap and keep the soil dry until it is wanted for use. In making new borders see that the soil is made very firm by treading or ramming. The young trees should be planted a little above the soil level to allow for sinking. Arrange the roots evenly and shorten the very coarse ones. When planting is completed, the surface roots should be about four inches from the surface. In choosing trees, select varieties not subject to mildew. The following sorts are very suitable and their fruits of good flavour. (*Peaches*): *Peregrine*, *Rivers' Early York*, *Bellegarde*, *Grosse Mignonne*, *Violet Hative*; for late use, *Nectarine Peach* and *Sea Eagle*. (*Nectarines*): *Cardinal*, *Lord Napier*, *Rivers' Early Orange*, *Pine Apple*, and *Spencer*. *Victoria* is a late sort but the fruits are liable to split on outside walls.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Orchard Houses.—Houses containing ripe fruits of Plums, Pears and Apples, will require very careful attention. Water should be given the trees when moisture is necessary, early in the morning, and when the trees are growing in borders, choose a fine day for watering so that the atmosphere may become dry before night. The air should be kept buoyant to preserve the fruits. Where there are pipes it will be advisable to turn on a little warmth during damp and wet weather, using the top ventilators a little to maintain the air in circulation. In the case of unheated houses, keep both the top and bottom ventilators nearly closed and use as little moisture as possible. Tits and flies are very troublesome in some gardens and all the ventilators should be netted to keep them out. Rats are also a great nuisance, and these should be trapped immediately they put in an appearance. Should there be any trees that have made rank, gross growth, these should receive attention at the roots. I find by far the best method is to lift the tree entirely and replant it, shortening the gross roots well back and making several notches on the top of what is left. Always make clean cuts, and trim all edges smoothly. When replanting use a little rich, fresh, sweet compost, containing plenty of mortar rubble. Place each series of fibrous roots in their proper layer and make the soil thoroughly firm. It is a good plan to have a supply of reserve trees on the outside walls ready for removal indoors to take the places of those that may be past their best. By this means, the houses may be kept well-supplied with strong, healthy, fruiting trees. Should the soil be fairly moist no water will be required for a few days after planting, then give the tree a good soaking of tepid water, sufficient to moisten the whole of the fresh soil. During bright bursts of sunshine it will be advisable to spray the trees, and in very bad cases, to shade them for a few days from the bright sun. Do not allow the roots to become dry through exposure to the air, but have ready plenty of damp mats with which to cover them.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Celery.—Proceed with the final earthing-up of this crop as it becomes ready; from now onwards the weather and the foliage will not be dry for long at any one period. The soil should be well drawn up around the plants, this time without covering the growing points in the centre. Beat the soil well down on each side of the ridge that is formed, with the back of a spade, in order to ensure thorough firmness and to throw off the heavy rains that may be expected before the crops are lifted. Some varieties keep in better condition for late use than others, therefore care must be taken to lift the earliest varieties first.

French Beans.—Late out-door sowings of French Beans are bearing freely, and will still produce a nice supply of young pods in districts where frosts have not yet been experienced. If available, spare lights placed on a temporary framework may be used for protecting the crop, or the lights may even rest on pots, laying mats around the sides, thus prolonging the season of out-door Beans.

Brussels Sprouts.—After so much wet weather, it will be necessary to go through all the plots of Brussels Sprouts and remove off decaying and dead leaves that will now be found in plenty towards the bases of the stems of the plants.

Mint and Chives.—In many establishments young Mint and Chives are in great demand through the whole winter, and steps should be taken to lift some roots of both herbs and place them in boxes for forcing in a greenhouse. The plants should be cut down when lifted,

and if a few boxes are placed in different temperatures, a continuous supply may be maintained.

Trenching and Digging.—Deep cultivation is of first importance. Much ground will be vacant now that the various root crops have been cleared off, also where Cauliflowers have been cut and Peas and Beans picked. Steps should be taken to get at least some of the ground trenched. No hard and fast rule can be laid down as to the best time to dig the ground; a great deal depends on the nature of the soil. It is wise to have as much ground as possible dug and trenched before Christmas, as the soil will be ameliorated by frost, and much valuable time will be saved when the busy months of spring arrive.

plants will now require to be cleaned over and moved to their winter quarters; also any succulents that may have formed part of this year's bedding scheme.

Michaelmas Daisies.—Plants now in bud or unfolding their flowers may be assisted in floral development by weekly applications of diluted liquid manure. Varieties that are past flowering and showing signs of mildew, should be cut over and the stems removed in order that the disease does not spread to the later sorts.

Late Figs.—Supplies of ripe Figs may be obtained for some time to come if a little care and attention are given to plants now carrying fruits at the swelling stage. These trees may

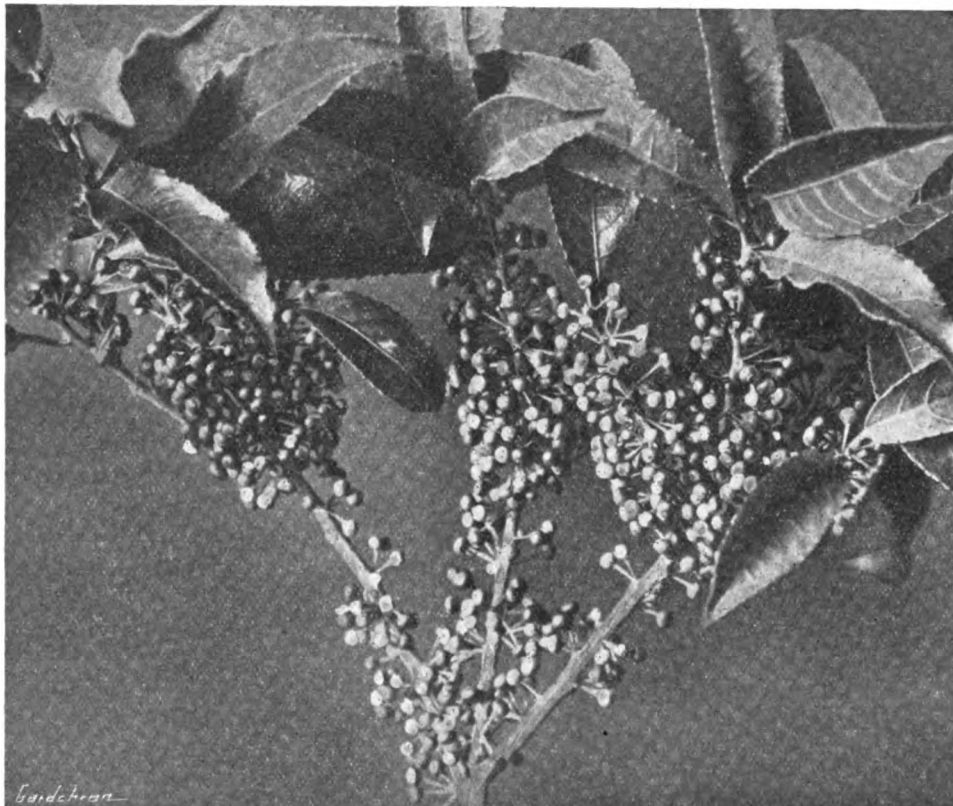


FIG. 105.—MELICYTUS RAMIFLORUS.

R.H.S. Award of Merit, September 22. Berries blue. Shown by Rev. A. T. Boscawen,
Ludgvan Rectory, Cornwall (see p. 254).

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE,
Lowther Castle, Penrith, Westmoreland.

Dahlias.—In this district the Dahlia plants are as yet untouched by frost. When, however, sharp frost comes, the plants should be cut down and the damaged foliage removed as early as possible owing to the unpleasant odour that arises from it. Cut the plants back to within six inches or eight inches of the ground level, and when lifting them, take care not to break the tubers. The latter should be spread out in some convenient shed for a day or two, allowing time for any soil attached to the roots to become dry; sort them over, label each variety securely, and store them in rough leaf-mould in a cool, dry, frost-proof shed for the winter.

Propagating Bedding Plants.—Continue to insert cuttings of Calceolarias, Pentstemons and Violas as they become ready for this purpose until the desired quantity is obtained. Alyssum may now be propagated; the dwarf edging varieties, if struck now, make better plants, and will be found to produce a more uniform edging than seedlings raised in spring. Earlier rooted cuttings of the more tender bedding

be given weak liquid manure once a week. Keep the house ventilated whenever possible during daytime, and the atmosphere dry and warm.

Beetroot.—In cold districts, this crop should now be lifted, but in favoured localities it may remain for a little longer in the ground. Great care should be exercised when storing the roots, for the slightest abrasion to the skin would cause them to bleed. Sand is the best medium for covering Beetroots, and they are best stored in a cool shed.

Carrots.—The main crop of Carrots may now be lifted and stored. Choose a fine day with the ground in good condition so that the roots will leave the soil cleanly. Use sand, as in the case of Beets, for covering the roots.

Salsify and Parsnips.—Both these root crops will be safe in the soil until required, and may remain undug unless the land is required for other purposes, in which case a pit may be taken out in some suitable corner to a depth of about twelve inches and the roots placed therein, shaking soil between each layer and well covering the whole with soil. Thus stored, the roots will be quite fresh when wanted.

NOTICES OF BOOKS.

The Vegetable Garden.

THE publication by the firm of M.M. Vilmorin-Andrieux et Cie. of the fourth edition of their classic handbook on kitchen garden plants has been eagerly awaited. The volume before us is a triumph of completeness and accuracy.* It contains 812 pages, including an index of over 100 pages with 100 entries on each page. The names of the principal vegetables are now given in some twelve languages. The work—which is perhaps best known in this country in the English edition by Mr. W. Robinson, the third edition of which was published in 1920—deals with kitchen garden plants grown in continental and colonial gardens, and consequently many well-known varieties of such vegetables as Peas, Beans and Potatoes, which are largely grown in this country, are not included; the cultivation of Pineapples, Melons and Strawberries is, however, included.

One of the most distinguished biologists recently observed that the practice in England as regards vegetables was both ignorant and ill-informed. What he meant to imply was that there are a number of excellent vegetables not commonly grown in this country. Most people, however, will be of the opinion that the vegetables best worth growing are grown admirably throughout Great Britain and Ireland. Some of the continental vegetables were at one time extensively grown in this country. For example, much attention was paid to the cultivation of Cardoons in the seventeenth century, and they held their own until they were replaced by Celery, a vegetable better flavoured and more easily handled. Other continental vegetables, for example, Aubergines, require in this country hot-bed or frame culture. At Burford, we grow with varying success the Asparagus Pea (*Lotus Tetragonolobus*), Sugar Peas, Gombo (*Hibiscus esculentus*), Aubergines, Florentine Fennel *Finocchio di Firenze*—quite a different plant to the herb garden Fennel), Kohl Rabi, Japanese Artichokes (*Stachys tuberosa*), Sweet and Chili Peppers, salad Potatoes, Belgian Chicory (*Witloof*), Celeriac, Cardoons, *Oxalis crenata*, and most of these might with profit and pleasure be grown in small quantities in any garden.

Again, alpine Strawberries (*Fraisières des Quatre-Saisons*) are a most useful crop and are unsurpassed in flavour. They used to be grown by Mr. Hudson, at Gunnersbury, in great quantities.

"Ignorant and ill-informed" English cultivators almost universally hesitate to pick their vegetables when young and grow them much too large, a practice encouraged by the pointing of vegetables at the Royal Horticultural Society's and other shows. The continent is more discriminating; for example, the Carrot grown for the Paris market is the "Carotte rouge courte amérionne," the shape of a top, one-and-a-half inch long, with richly-coloured, transparent flesh and no core. Very sweet, it is one of the most delicious of vegetables served *à la crème* or *à la Vichy*, or as *Leipziger Allerlei*.

The cultural directions are one of the features of the volume, and in their terse French, are clearness itself, a virtue which is difficult to render in translation. This is the fourth edition, the first edition having appeared in 1882, and the third, which forms the basis of the English edition of 1920, twenty years ago. In this edition the Peas and Beans have been completely revised in agreement with continental practice, while the Potatoes are now arranged in accordance with Messieurs Vilmorin's own trade classification.

The sections devoted to vegetable pests and diseases have been greatly extended, and the cultural notes always include full particulars, including recipes for manures. The old illustrations are retained, with a certain number of additions, and these are, perhaps, the weakest feature of the book; they are, however, very numerous and occur on practically every page.

* *Les Plantes Potagères*, Quatrième Edition, Vilmorin-Andrieux et Cie. Paris, 1925.

At the present rate of exchange, the book costs about 7/6; it reflects great credit on the Directors of the firm and worthily carries on the tradition of Henry and Philippe de Vilmorin of undying memory. *William Lawrence.*

Your Few Acres.

AN extremely interesting book has been produced by Mr. E. T. Brown under the title of *Your Few Acres: How to Manage them for Profitable Production*.* It is the sort of book that would prove a handy work of reference for those who own a "small place in the country." Very properly, the first part of the book deals with the garden and orchard, but necessarily in a work of this kind the information is given in the briefest possible form, and is condensed to forty-six pages, with several illustrations which are not altogether in keeping with work on a "few acres," as several of them deal with fruit cultivation on a very large commercial scale. The diagrams to illustrate budding, various forms of grafting and pruning, are, on the whole, quite good, and may be followed by any intelligent person.

The succeeding chapters are on Horses, Cows and Dairying, Pigs, capably illustrated; Goats—a very informative chapter on a very useful animal; Poultry, on which subject Mr. Brown is eminently qualified to deal; Pigeons, without which no country home is complete; Rabbits, also capably illustrated; Dogs and Bees.

The remaining chapters are devoted to such subjects as Maintaining Nature's Balance; Manures: their treatment and application; Allocation of the Land a useful chapter as it indicates how much land can be profitably allocated to various kinds of stock, fruit trees, garden and paddock; Buildings and their Construction, which deals chiefly with out-houses, stiles, and fences, gates, and even the manure pit. How to Market the Produce, and How to Keep Accounts, complete, with an unusually good index, a very useful book.

ALPINE GARDEN.

ANDROSACE SPINULIFERA.

I RECENTLY saw a number of plants of the charming and interesting *Androsace spinulifera* in the nurseries of Messrs. Oliver and Hunter, Moniaive, and a short note on this species may be of service to many. It is a very distinct and attractive little plant, absolutely hardy, and not apparently resenting to the same degree as some, the wet winters we experience in certain parts of these islands.

It has acquired its specific name from the little spines which generally develop at the tips of the young leaves. It forms a close tuft of small foliage during its resting season, but as the season advances, the narrow, silvery foliage extends into a pretty rosette from which arise six-inch or eight-inch stems, surmounted by heads of rosy-pink flowers with a yellow eye. It is a charming plant, easy to cultivate in a rich but cool soil and in slight shade. *S. Arnott.*

BULB GARDEN.

CROCUS FLEISCHERI.

Crocus Fleischeri, a native of Asia Minor, is one of the spring-flowering species of *Crocus* not frequently seen, although procurable from some bulb dealers. Its corm has a beautifully netted coating, and the flowers, although far from showy, are most charming. They are of fair size and rather lanceolate in the form of the segments. The outside segments are pleasingly veined with purple, while the interior has an unbearded yellow throat and orange-red anthers. Sometimes a poor variety of *Crocus vernus* has been substituted for *C. Fleischeri*, but the two are quite distinct. *S. Arnott.*

* *Your few acres: how to manage them for profitable production*. By E. T. Brown. Chapman and Hall, 11, Henrietta Street, W.C. 2. Price 10s. 6d. net.

TREES AND SHRUBS.

ARALIA CHINENSIS.

THIS interesting, large, pinnate-leaved shrub, or small tree, is a most useful ornamental subject for the pleasure grounds, either as a lawn specimen, or in shrubby beds and borders. Average specimens may be ten feet to twelve feet in height, and perhaps as much in diameter, with several stout, spiny stems which are of striking appearance in winter when the plant is leafless. The doubly-pinnate leaves range from one-and-a-half feet up to four feet in length, and one foot to three across.

The small white blossoms are very freely produced in large, wide panicles during August and September.

A. chinensis (Fig. 107, p. 269) is a native of China, Japan and Manchuria, being first introduced to British gardens about 1865. The plants thrive best in a comparative light, well-drained soil in which the roots revel and throw up suckers, often at some distance, from the main stem. Suckers and pieces of the thick fleshy roots provide ready means of increase.

There are several varietal forms, the names indicating how they differ from the type. *Albo-marginata* is a particularly good variegated shrub, and very effective as a lawn specimen. In shrubberies the tall upright forms *var. pyramidalis* and *var. elata* are useful.

There is an American species, *Aralia spinosa*, having a more spiny stem. It is, however, a rare plant in British gardens, being less hardy than the Chinese species. For years (it occurs even yet) a form of the Chinese plant was often grown as *A. spinosa* until the subject was closely investigated by botanists. *A. O.*

LOMATIA FERRUGINEA.

I WAS delighted recently, when visiting my friend Mr. Charles Traill, gardener to W. Currie, Esq., at Castle Levan, Gourrock, Renfrewshire, to find this fine shrub, a native of Chili, thriving amazingly. There are six or more specimens with their graceful, Grevillea-like foliage sweeping the ground, and the tallest plants are nearly twenty feet high. These plants are certainly the finest I have ever seen of their kind, and on the occasion of my visit they were in full flower, the crimson and yellow blossoms being carried in innumerable clusters on the previous year's wood, and the whole forming so uncommon and unusual a sight, that I must confess to a partial infringement of the tenth commandment on my part.

So far as I could gather, these *Lomatias* were brought home and planted by a previous owner of Castle Levan many years ago, before the cult of shrubs was so general as it is to-day; they have had no protection whatever, but stand in the open in what is roughly a north-west exposure on the shores of the Firth of Clyde. This being the case, there is no reason why in hundreds of places on our western seaboard *Lomatia ferruginea* should not be grown successfully, and add its distinct character to the great variety of exotic plants already collected there. The undersides of the foliage and the stems and branches are covered with a rust-coloured tomentum, and when waving in the breeze, the combination of browns and greens is most effective.

This can scarcely be the same plant as those described by Mr. W. J. Bean in *Trees and Shrubs, Hardy in the British Isles*, Vol. II, pp. 37; at least, no signs of the "blue-white beneath" or "rosy-red and white flowers" he mentions are apparent on the plants growing so happily at Castle Levan. *A. T. H.*

MYRTUS LUMA.

THE common form of Myrtle (*Myrtus communis*) is so well-known, and so well appreciated for its ornamental beauty—and also because it is the emblem of happiness—that a few remarks on another member of the family may be of general interest.

The subject of this note, *Myrtus Luma*, is a native of Chili, and is one of our most beauti-

ful evergreen flowering shrubs; coming into flower towards the end of August, and continuing through September, it is a joy each year, when the greater number of our flowering shrubs are past. It has not proved hardy in the inland and colder parts of Great Britain, as W. J. Bean, in his admirable work *Trees and Shrubs Hardy in the British Isles*, states that "It has been killed more than once at Kew, even with the protection afforded by planting it against a wall," but in the milder western districts it has stood in the open unharmed for nearly a quarter-of-a-century, and one plant here is a magnificent specimen, nearly twenty feet high, and about fifteen feet in diameter which proves conclusively that it might be more extensively planted in those districts where the thermometer rarely registers more than ten degrees of frost during winter.

The milk-white flowers are borne in clusters at the points of the young shoots, and the plant referred to is simply smothered in blossom, with its dark green, glossy and sharply pointed foliage as a background; and later, when the black fruits are ripe, they form a rare feast for the birds who soon discover any new source of nourishment that is to their taste. The bark on the main stems and branches is of a cinnamon colour, and gleams between the branches in the autumn sunshine, adding a touch of colour which is very attractive, until the bark begins to scale off in the manner of the London Plane, showing greyish-green patches on the thicker stems and boughs.

A year or two ago when renewing the label on one of our plants, I pushed the lower branches aside in order to put the label close to the main stem, when I was agreeably surprised to find not one or two seedlings, but a perfect carpet of them covering the ground; they were from two to three inches high; hundreds of them and so closely together that at first glance one might have mistaken them for a carpet of the small-leaved Periwinkle. Many of these seedlings have since been distributed among friends, but the "seed-bed" shows no sign of exhaustion, and our source of supply still holds good.

Myrtus Luma is also very readily propagated from cuttings of half-ripened wood taken off with a heel and inserted in sandy soil, either in pots or in a frame, and here again experience proves that cuttings so rooted flower at a much earlier stage than seedlings. A. T. H., Culzean Castle Gardens.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM GRANDE.

NOTWITHSTANDING the numerous hybrids of *Odontoglossum* which have been raised, there are still some of the old species which hold their own amongst the new comers. *Odontoglossum grande* is a notable example, and is incomparable as a plant to produce flowers at this season when flowers of *Odontoglossums* are somewhat scarce.

Odontoglossum grande is the largest-flowered of all known *Odontoglossums*, and was discovered so far back as 1839; fortunately, it is still plentiful in this country and procurable at a very modest outlay, therefore it should enjoy extended cultivation. Its flowers are five to six inches across, of a most beautiful yellow, barred with cinnamon-brown, and when well-grown from four to seven flowers are produced on a spike; these adapt themselves to all kinds of decorative work, especially dinner table decoration, when combined with suitable foliage.

It is on record that fourteen flowers were produced from one leading pseudo-bulb, and considering the ease with which it may be grown and the little space it occupies, one wonders at the restricted cultivation of this species, especially where Orchid flowers are in demand.

Unfortunately, no one as yet has succeeded in raising a hybrid from this handsome *Odontoglossum*, although the attempt has been made

many times. Owing to its size, and glorious colour, it would make a perfect parent could it be persuaded to combine with other species or hybrids.

The culture of this species is of the easiest. The plants are best grown at the warmer end of the cool house, or preferably at the cool end of an intermediate house, in the usual compost recommended for this family, i.e., rough peat fibre, and Sphagnum moss.

Having thick fleshy leaves they enjoy rather more light than *Odontoglossums* of the *O. crispum* section; having thick, fleshy roots, the potting material is best used in a rough state, and ordinary pots make the best receptacles.

Some little time after flowering, when the

other species and varieties of *Odontoglossums* of a somewhat similar nature which succeed under similar conditions, but which produce their flowers at different seasons. They are *O. Williamsianum*, which flowers much earlier; its flowers are smaller, and by some it is considered to be a variety of *O. grande*. *O. Insleayi*, and its varieties, with pseudo-bulbs, leaves, and inflorescence as in *O. grande*, produces its flowers in August and September, these are two-and-a-half to three inches in diameter. At present it is a somewhat rare plant.

O. Schlieperianum is another fine species, intermediate between *O. Insleayi* and *O. grande*; it produces its flowers at irregular intervals, and, as in *O. Insleayi*, these are

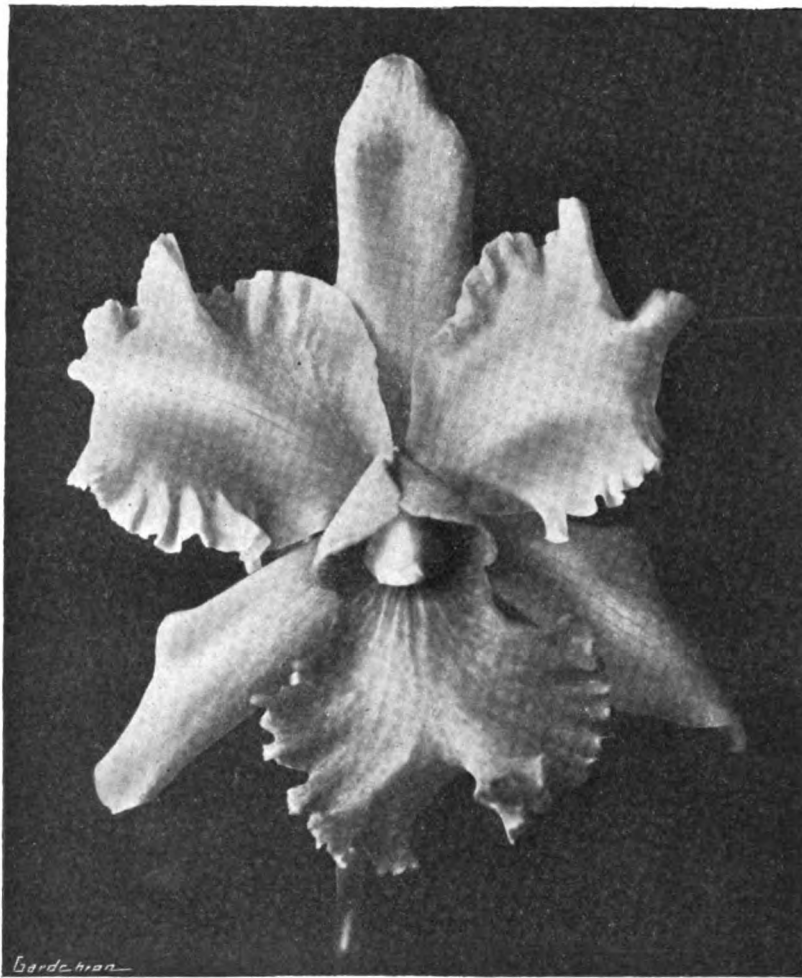


FIG. 106.—CATTLEYA MIMOSA VAR. SUPERBA.

R.H.S. Award of Merit, September 22. Flowers golden-yellow, with crimson-purple lip. Shown by Messrs. J. Cowan & Co. (see p. 254).

pseudo-bulbs are fully developed, the plants should receive dry treatment and be given only sufficient water to prevent shrivelling. The members of this section of the *Odontoglossum* family enjoy a long season of rest. Excessive moisture decays the roots and excessive drought shrivels them, hence the deterioration of the plants under faulty resting conditions.

The flowers last from three to four weeks in full beauty if kept dry, and may be retarded considerably, if required, by placing them in cool, dry quarters.

Odontoglossum grande usually flowers from October to March, but not infrequently earlier, according to the season. There are several distinct varieties of this handsome old Orchid, some with more colour, and others with the brown entirely obliterated. There are a few

smaller than those of *O. grande*, but produced in larger number on taller spikes, so what is lost in size is gained in quantity.

These species are more susceptible to damp than *O. grande* during the winter months, therefore a dry place should be found for them whilst they are at rest.

The commercial grower of Orchids who has facilities for growing *Odontoglossums* should find this section useful. Their chief requirements are a humid atmosphere whilst making their growth, with a free circulation of air, and a long rest when growth is completed. They do not suffer so much from the humid heat of summer as the Colombian species do, and are often found in a flourishing condition in gardens where the cultivation of *O. crispum* is attended with great difficulty and much disappointment. J. T. B.

NOTES FROM WISLEY.

In the fruit plantations at Wisley many of the Apple trees are carrying a heavy crop. Among others, Allington Pippin, Blue Pearmain, Cox's Orange Pippin, and Cox's Pomona have borne well, particularly the last-named variety, which rarely fails to produce an abundance of fruit.

A particularly virulent form of brown rot has been attacking certain varieties of early Apples, such as White Transparent, which is not only causing the decay of mature fruit, but has been attacking the fruit in its early stages and causing it to drop. In most instances no wound is observable, and it is probable that the fungus made its entry at the flowering period, or soon afterwards, through the eye of the fruit. This matter is being investigated by the Mycological Department, which is also carrying out experiments in connection with diseases of Narcissus bulbs, and with eelworm attacks.

Many interesting shrubs are in bloom, notably *Abelia grandiflora*, *Ligustrum Quihouii* and *Ptelea trifoliata*. The flowers of the latter are greenish and insignificant, but the leaves on the flowering shoots are bright yellow and give the plant a striking appearance. A specimen which has attained the height of eight or nine feet may be seen in the shrub border in the front of the greenhouses. Brightly-coloured foliage is also a feature of *Hypericum patulum* var. *Forrestii*, large plants of which may be found in the border which adjoins the Dahlia Trial.

A handsome, silvery-foliaged shrub, *Senecio laxifolius*, is flowering near the entrance to the rock garden, while among the sub-shrubs *Ononis Natrix* is in bloom near the Alpine house. It is a pretty little Rest-harrow with downy foliage and flowers remarkable for the red stripes on the back of the yellow standard. In the beds which adjoin the alpine house many interesting seedlings and hybrid *Dianthi* are flowering, such as *D. puberulus*, *D. chinensis* var. *Seguieri*, and *D. leptopetalus*, with its very long flower stalks and little white flowers backed with pink.

Other rock plants in flower are *Silene Schafta* with pink flowers, and the clustered bell-flower, *Campanula glomerata*, which is often seen at its best when growing wild in this country, for when it is brought into the comparatively rich soil of the garden, the flowering stem elongates and the pretty clustered arrangement of the blossoms is upset.

At this time of year many of the *Polygonums* are in flower about the gardens. At the side of the Rose walk, a pink-flowered plant of *Polygonum baldschuanicum*, the well-known rampant climber, is scrambling over a pillar, while *P. campanulatum*, and *P. affine* are blooming in the rock gardens where *Rumex flexuosus*, notable for its perennially brown foliage, is spreading rapidly. Another relative of the *Polygonum* group is *Oxyria digyna* (syn. *O. reniformis*) or Mountain Sorrel. It has been described as a plant of no importance, but the foliage assumes some beautiful shades of red at this time of year. Plants of *Clematis Bergeronii* and other species have been established at the foot of the wall at the new entrance, and it is hoped that they will grow through the openings in the brickwork. On the wall of the laboratory *Desmodium cinerascens* and a species of *Indigofera* are in bloom, both of which have purplish flowers.

The majority of the Dahlias on trial at Wisley are now flowering freely. In the Star class, Charlwood Star, Highmead Star, and Crimson Star are attractive, and among the Cactus-flowered varieties *Acme* and *Joyce Goddard*, with bright orange blooms, are good.

There seems to be little justification for the charge in a recent article that the Cactus Dahlia is "absolutely useless as a garden plant," for although it must be admitted that the varieties of this section are not so early or so prolific as those of some other types, the peculiar form of the flower renders them particularly conspicuous in the garden, and when planted against a dark background of shrubs they

can be of more value than any others. In addition to *Aimée Barillet*, there is another dark-foliaged Dahlia in this trial, namely, *Nigra*, the stems of which are nearly black and the flowers bright crimson fading to magenta. It is classed among the small, Camellia-flowered varieties. *J. E. G. White*.

NOTES FROM GLASNEVIN.

SOME SEPTEMBER-FLOWERING SHRUBS.

WITH the advent of September shrubs in flower have become few, and the season may be regarded as nearly over. True, a fair list may be compiled if one counts those with a stray blossom or two, but flowers are giving way to fruits and autumnal foliage. Some, however, are still attractive for their flowers at this season and on that account are valued by the true plant lover.

Atraphaxis lanceolata, a dwarf, spreading, deciduous shrub of the *Polygonum* family, producing twiggy branches clothed with lanceolate leaves, bears racemes of white flowers in abundance. These, at present, make a pretty picture on the rockwork or in front of a shrubbery by reason of the persistent sepals which envelope the fruit and become deep pink or Rose-coloured. A sunny position in well-drained soil suits this shrub which hails from southern Europe, the Caucasus and Turkestan.

Ceratostigma Willmottianum may not be strictly a shrub under some conditions, but here it is decidedly shrubby in the rock garden and warm sunny borders. It bears abundant bright blue flowers which never fail to please, and on a sunny day finds many admirers. Of Chinese origin, *C. Willmottianum* grows here about two feet high and may in time exceed this. Cuttings root readily in a close cold frame.

Chilanthus arboreus, a South African shrub of the *Buddleia* family, requires a warm wall, and in that position has lived for many years. It bears opposite, lanceolate leaves, green above and grey tomentose below, and large terminal panicles of dull white flowers. It cannot be recommended as a particularly attractive shrub, but lends interest at this season. The individual flowers are small but extraordinarily numerous, forming a dense mass. The tube of the corolla is stained with red, the spreading limb white.

Clematis tangutica obtusiuscula is an excellent, late-flowering variety, now well-furnished with nodding, golden-yellow flowers, borne on erect stalks some four to six inches long. These are followed by feathery achenes of silvery appearance which prolong the season of beauty. The plant is vigorous and quickly covers a large area: it is suitable for pergolas, arbours, etc., will trail over hedges and old Apple trees, covering them with a mantle of green in summer, adorned with golden flowers and silvery fruits in autumn.

Clethra alnifolia albo-rosea has been in full flower from the end of August to the middle of September. It is similar to the type in all respects save the colour of the flowers, which are flushed with rose instead of being pure white. It is a useful shrub, six to eight feet high, associating well with evergreen *Rhododendrons* none of which is now in flower.

Cornus paucinervis would probably not be placed in the front rank of flowering shrubs earlier in the year, but at this season it is a plant of some merit. It is deciduous, the leaves lanceolate or oval, varying in size from one to five inches long and proportionately wide. The flowers are white produced in slightly rounded corymbs, which are followed by black berries. Associated with evergreens this native of China is capable of quite a pleasing effect. It is now, after the middle of September, just going over.

Hydrangea arborescens grandiflora (Fig. 111), is one of the finest of late-flowering shrubs at Glasnevin. The large corymbs produced at

the apex of the current year's shoots are composed of sterile flowers the bracts being pure white. It requires rich soil, and here is much more satisfactory than *H. paniculata grandiflora*, a native of Japan, the former hailing from the United States. *Hypericum chinense*, a native of China and long known in gardens, is now entirely hardy here, but has grown well for a number of years in a narrow border in front of one of the plant houses. It is now bearing its bright yellow flowers, and is quite an attractive plant associated with other shrubs requiring a sheltered position.

Indigofera argentea bears its short, erect racemes of rose-coloured flowers quite freely in September. The leaflets are furnished on both sides with short, whitish hairs which give them a grey-green appearance. A sunny position in rather dry soil suits it best, and it does well on an elevated part of the rock garden. *Indigofera Gerardiana* from the Himalayas is one of the better-known species bearing longer racemes and is altogether a larger-growing plant. It, too, likes sun and a well-drained soil. *Indigofera pendula* (forma), one of Mr. Wilson's introductions gives promise of being a useful species. It is flowering freely now in mid-September, both as a bush in the open, and trained against a wall. The long, pendulous racemes of purplish-rose flowers contrast well with the dark green, pinnate leaves. Several other species are in flower, but the genus as a rule is one for gardens farther south where the sun is hotter. Both *Indigofera* and *Lespedeza* frequently get killed to the ground in winter, and unless the following summer be very favourable, fail to grow quickly enough to flower.

Oleuria oleifolia, which here grows into a large bush eight to ten feet high, is the last of the genus to flower. Opinions differ as to its merits, and for ordinary purposes I do not think it is equal to *O. Haastii* or *O. macrodonta*. Regard must be had to its season of flowering, however, and for those who want a strong-growing evergreen it is worth noting. It is as hardy as the two commoner species mentioned above.

Pewerskia atriplicifolia, a native of the Himalayas and thence into Afghanistan, is in the front rank of late-flowering shrubs. It rejoices in a hot, sunny position in deep, well-drained soil, and should be pruned hard in early spring. The downy, summer shoots are clothed with opposite-toothed leaves which are grey-green. The long panicles produced at the ends of the shoots are composed of numerous violet-blue flowers of rare beauty. An old bush well-furnished with shoots arising from near the base makes a very lovely picture in September. The summer shoots occasionally get killed back to some extent during winter, but break strongly again from the lower, more woody base.

Salvia neurepia, a native of Central America, may only be reckoned as hardy in the most favourable localities, yet it has lived for years on the rock garden at Glasnevin with no more protection than the branches of a Yew tree high above it. The position, however, is a very dry one, and therein lies the secret with many plants not otherwise hardy. The stalked leaves are ovate, very prominently veined, green on both surfaces, downy below, very slightly so above. The flowers, produced in short racemes at the ends of the twigs, have a two-lipped, striate calyx; the corolla with its broad expanded lip is bright crimson. The leaves, when bruised, emit a strong scent like that of Black Currants.

Polygonum Aubertii, which is apparently a white form of *P. baldschuanicum*, is now one of the sights at Glasnevin. Completely enveloping a tall tree of *Cypripedium sempervirens fastigiatum* the effect is that of some gigantic flowering shrub. Like the *Atraphaxis* mentioned above it owes its beauty to the persistent calyx which clothes the fruit, the sepals in this case being white. *Polygonum baldschuanicum* is similar in its vigorous growth but has pink sepals. Both are very strong growers and should be planted where there is no danger of them smothering less vigorous or rare plants. *J. M. Besant*.

KEW NOTES.

USUALLY, when confronted with the question, "What is the most striking tree or shrub in the Arboretum?" it is not easy to find an answer, but to-day the answer without hesitation is *Nyssa sylvatica*. Brilliant is an insufficient word to describe the wonderful red colouring of practically every leaf on a tree twenty-five feet high. Another tree about a dozen yards distant is much later every year in developing the autumn colouring, and though generally attractive, the colouring is nothing like such a striking fiery red as the tree which suggested this note.

The Tupelo or Pepperidge Tree, *Nyssa sylvatica*, is a native of eastern North America, found up to 100 feet in height in a wild state. According to *The Trees of Great Britain and Ireland*, by Elwes and Henry, the tallest specimen recorded in the British Isles is a tree eighty feet high on the Duke of Wellington's estate at Strathfieldsaye. Though described as thriving best in a wild state in bogs and swampy ground, the trees at Kew are growing well in the light loamy soil of the gardens now the roots have got beyond the station of ground prepared when the young trees were planted.

The Japanese Honey Locust, with elegant pinnate leaves, is always an attractive lawn tree in summer, but doubly so now that the graceful Fern-like leaves are changing to a rich yellow. Seeds imported from Japan provide the best method of propagation, the best trees at Kew.

The Peruvian Swamp Lily, *Zephyranthes candida*, is very extensively planted as an edging for flower borders, and is a most useful subject for the purpose. The thick, bright green, grass-like leaves provide a permanent evergreen edging, and from August to October there is a succession of white, Crocus-like blossoms.

Large areas of the single-flowered China Asters have for some years past been a feature at Kew. The display this year is attracting considerable attention. Sown where the plants are to flower, on ground from which turf has been cut for patching and alterations to lawns, their cultivation is simple. The wastage in turf is replaced with mould from the garden refuse heap and bonfire. This is forked in, the surface raked level and the seeds sown. Big weeds are removed and if there is time a little thinning of the plants is done. In addition to being most effective in a private garden, single China Asters are useful and last well for cut-flower decoration. *A. Osborn.*

HARDY FLOWER BORDER.

OSTROWSKIA MAGNIFICA.

THIS is one of the most beautiful of hardy plants. It was introduced by Dr. Regel from the sandy deserts of Bokhara. The beauty of this oriental Bellflower is great when the plant is established in deep, sandy soil well mixed with old mortar or brick rubble. It is quite useless to plant it in ordinary, unprepared soil, as the fleshy, Carrot-like roots travel deeply; I have found the roots as deep as two or more feet in pure gravel and sand.

The stout stems, well-furnished with glaucous foliage, are surmounted with their large, Campanula-like flowers, of a satiny-mauve colour, flushed with white, and these are exceedingly effective when borne on stems five feet to seven feet tall. Propagation is effected by root cuttings and seed.

ROSCOEA CAUTILOIDES.

ONE of the most beautiful of Mr. George Forrest's introductions from China is obviously *R. cautiloides*, and it is with much pleasure I record its hardiness during the past three winters at Enfield, where, in deeply dug beds in a fairly light sand loam, and given ample drainage, it has produced its bird-like, pale Primrose or canary-yellow flowers in abundance.

The fleshy tubers were planted from five to six inches deep, embedded in a fair proportion

of coarse sand. What seems most necessary is a goodly amount of moisture while the plants are in a growing state, and they must never be allowed to suffer from lack of moisture. However, in colder districts than Enfield it would be advisable to lift and store the tubers in silver sand, replanting them in spring. When grown in pots for cool greenhouse decoration, *Roscoea cautiloides* suggests a beautiful Orchid. *W. L., Enfield.*

THALICTRUM DIPTEROCARPUM ALBUM.

THE beautiful white variety of the graceful *Thalictrum dipterocarpum* was shown by Messrs. Cunningham, Fraser and Co., Edinburgh, at the Edinburgh International Show and received an award from the Royal Caledonian Horticultural Society. It is not absolutely new, and appears to be finding its way rapidly into cultivation. I saw it in fine bloom in

PUBLIC PARKS AND GARDENS.

THE Parks Committee of Birmingham Corporation has received sanction for the carrying out of certain works as unemployment relief. The principal items of expenditure include £42,485 on the laying-out of various parks; £3,420 for improvement in cemeteries, and £38,019 for asphalt and tar-paving work in the various parks.

THE purchase by the Corporation of Guildford of Stoke Park is an event which has awakened great interest in mid-Surrey. The property had been on the market for some time, but the recent electrification of the Southern Railway from Waterloo to Guildford with trains every twenty minutes throughout the day, and



FIG. 107.—ARALIA CHINENSIS; FLOWERING BRANCH.

(see p. 266).

another Scottish nursery a few days ago. It is truly a charming plant with its graceful sprays of white, and it is assured of general favour by reason of its beauty.

By-the-way, quite a number of people have been disappointed with *T. dipterocarpum* because of its tendency to die off in their gardens. It appears difficult to diagnose the cause of this, but it happens very frequently, as I have known. It is not every one who can give it the conditions of a stony soil with moisture underneath, which is recommended by an eminent authority on hardy flowers. The stony soil may be readily supplied, but the underground moisture is not easily secured, and most folks have to endeavour to cultivate this lovely *Thalictrum* in the ordinary border. In a dry border, without the moisture underneath, I have lost it more than once. The charming white variety appears to be fairly robust, but it will probably have the same foibles as the other. It is a gem, however, worth trying everywhere where hardy flowers are appreciated. *S. Arnott.*

Stoke Park being quite close to London Road Station, seem to have brought matters to a head. The increased travelling facilities will undoubtedly give rise to a still greater demand for houses and the property would have been the first to tempt speculative builders. The Mayor, J. B. Rapkins, Esq., opened negotiations with the owner, and for the sum of £42,500, the estate becomes the property of the Town of Guildford. The estate comprises 186 acres, and includes a mansion, a large old-fashioned garden, lodges, farm and buildings: it is richly timbered, has fine open spaces, a winding river, and a long woodland walk. It has a frontage of about a mile-and-a-half along the London Road, and a mile or so along the Guildford-Woking Road. If it be decided to sell the frontage along these roads for building sites, as well as frontages of a new road through the estate, it is estimated that the purchase price will be almost recovered, and there will still be left ample space for the lay-out of a public park for the amenities of the town of Guildford.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the **PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.**

Editors and Publisher.—Our correspondents would oblige by delaying answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the library department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

Urgent Communications.—If sent by telegraph, these should be addressed "Gard. Chron., Rand; or by telephone, to Gerrard, 1542.

Letters for Publication as well as specimens of plants for naming, should be addressed to the **EDITORS, 5, Tavistock Street, Covent Garden, London.** Communications should be written on one side ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.

TRAINING OF YOUNG LADS IN HORTICULTURE.*

THE subject about which I have been asked to address you is by no means a new one, as in one form or another it has been prominently before the gardening world for more than a century past. Naturally, during that period many broad-minded views have been advanced, and sane, far reaching suggestions made on the subject, while, on the contrary, many fantastic propositions have been brought forward from time to time by so-called experts which, if they had been followed, would not have tended to produce the first-class type of British gardener of which we are so justly proud to-day. One of the most enthusiastic advocates of the better training of young gardeners was that remarkable landscape gardener and author, John Claudius Loudon. So far back as 1826 he pointed out in *The Gardeners' Magazine* (a periodical he was at the time publishing in the interests of horticulture) how important it was that young lads taking up gardening as their life's work should have a thoroughly good training. As the educational system of the country in those days was, of course, not what it is to-day, the question of the gardener's general education was always considered together with his training in the craft of gardening. As Technical Schools and Organised Science Classes, which are such an important feature of all modern educational systems, were then practically unknown, young gardeners usually could only gain knowledge on many quite elementary educational subjects by means of what was commonly called "self-instruction." Loudon was so much impressed by the necessity for young gardeners to improve their general knowledge that in 1843 he wrote a most valuable book for their use (which, however, was not published until after his death) entitled:—*Self-Instruction for Young Gardeners*. Throughout the whole of this work I do not think there is a single reference to what we might call garden practice. It is, as a matter of fact, merely a treatise on arithmetic, book-keeping, surveying, drawing, planning, etc., but it must have been of the greatest assistance to young men whose school education finished (as was generally the case at the beginning of the nineteenth century) at the age of ten or eleven. To-day, with perhaps the exception of planning and surveying, most lads leaving an elementary school at the age of four-

teen or fifteen, have had a good grounding in most of the subjects dealt with in Loudon's book, and the important thing for lads now, is that they get a thorough training in the craft of gardening, and acquire such other knowledge as may lead to their excelling in that art. The aim of horticulturists to-day should be to provide lads with such a training as will make them thoroughly practical, rather than theoretical, actual, rather than book-wise gardeners.

Even here, however, it is necessary to define what is meant by a "practical" gardener, for some folk have rather crude notions on this point, as I discovered the other day when a young man called upon me in search of a post as a gardener. When asked if he were a trained gardener he replied that he was, as he had served a thoroughly practical apprenticeship with his father for a period of six years, and thereafter worked two years in another large garden. In order to satisfy myself as to his experience (for trained gardeners in the Manchester Parks Department receive a higher rate of pay than untrained men) I naturally put a few questions to him, relative to the details of his training. I first enquired if he had had any experience under glass, to which the ready reply was that he had actually served half of his time working under glass and the other half out in the open garden. Q.—Any experience with Orchids? A.—Yes, he had had a little. Q.—Were they terrestrial or epiphytal Orchids? A look of bland astonishment passed over his face, and he then confessed that he had never heard those terms before. Q.—Had he potted Orchids? A.—Yes, he had helped his father. Q.—What was the method followed in potting *Cypripedium* or *Cattleya*? He admitted that he had never to his knowledge heard the name of *Cypripedium* or *Cattleya* before. Asked if he knew how to propagate *Cupressus Lawsoniana* he innocently inquired, "Is that an Orchid?" The names of several ordinary flowering trees and shrubs were mentioned, and he was asked if he knew them. He was sorry he did not, and then hurriedly excused his ignorance by saying: "You know I only claim to be a practical gardener, I know nothing of theory; put me to trim a hedge, clip a Privet shrub into shape, or mow a lawn, and I can do it with any man." Let us hope that this conception of what is meant by a "practical gardener" is quite unique. My own definition of the term "practical gardener" is a man who knows the science of gardening sufficiently well to make him an intelligent and skilled craftsman. The Alpha and Omega of all horticultural training should be to turn out men expert in garden craftsmanship.

Theory and practice (or as it is more frequently designated, science and art) must go hand in hand in the training of all craftsmen if they are to produce first-class work, and horticulturists are no exception to the rule. But horticultural training in this respect must be very judiciously balanced and every care taken to make students realise that after all theory is but the handmaiden of art, and must never be allowed to usurp its rightful place. This, unfortunately, is just where the danger of present-day horticultural training lies. I am told by examiners that while many students who present themselves for diploma examinations write most excellent essays on garden science, numbers of them when put to practical work fail to carry it out in the expert manner that would have been required to satisfy head gardeners a generation ago when testing their young apprentices.

There are three methods which may be adopted in the training of craftsmen.

The first is to give the theoretical training appertaining to the craft during the youth of the student immediately on his leaving school. Usually this may take two, or even three, years, and then, having secured certain diplomas, the student passes out of the college and serves a given period in doing practical work. This, while it has much to be said in its favour, is, from the point of view of producing skilled craftsmen, the least satisfactory course, and is rarely, if ever, followed in the case of horticulture.

The second is to give the practical training immediately following the school days of the youth, and after the rudiments of the art of the craft have been mastered, the student learns something of the science of the craft. So far as training in horticulture is concerned, this is the commonest method. Many young gardeners have little chance of learning anything of the science of horticulture until they are journeymen and go to Kew, or into public gardens or nurseries in towns or large cities, where they can attend classes.

The last method is to give the practical and theoretical training in conjunction, which, it must be admitted, is the ideal procedure. In the training of young lads in horticulture this practice, for very obvious reasons, is unfortunately not always possible. Generally speaking, this method of teaching can only be carried out systematically in a school of horticulture.

In the selection of young lads for training in horticulture, there are three factors which should always be taken into consideration by those responsible if the best results are to be achieved.

The first is that the person desiring the training must have a real liking for gardening. He must indeed feel that it is his vocation, for unless a lad has a natural love for the work, there is very little chance of his making a success as a gardener.

The second factor I would emphasize is that the trainee ought to have had a good general education. Personally, I think a lad who has had a secondary school education starts with better chances than the boy who has only had an elementary education. If the former has matriculated, his chances are better still.

The third is that the lads chosen for a horticultural training should be physically strong and robust. While it is, of course, admitted that the open-air life of a gardener adds to his chances of good health, yet it is almost essential that the successful garden craftsman should have a good physique and a healthy constitution from the start.

My experience in the training of lads in horticulture—an experience extending well over thirty years—has been that the choice of lads is a more or less limited one. While it has been my privilege to train some most excellent lads, yet, on the whole, the majority of those who have passed through my hands have not been as well educated as I should have liked. The reason for this is not far to seek, and will be fully appreciated by most of my hearers to-day. The plums in the gardening world (at least so far as good salaried positions are concerned) are fairly limited, and the parents of better-class boys who would be prepared to spend money on their training in one or other of the professions, are very loath to encourage them to become gardeners when they learn what the financial prospects are at the end of their training. For this very important reason many a potential Paxton, Loudon, or Nicholson, has within recent years been lost to the horticultural world.

In the training of lads in horticulture, the question naturally arises as to the character and extent of the practical work they are to be called upon to perform, and how they are to be treated in relation to other workers in the garden. In the old days of indentured apprentices this question never arose, for apprentices were bound to do without demur whatever work they were put to, or suffer for it if they did not, and no difference in this respect was made between them and the ordinary garden boy. To-day, boys who have passed through a secondary school and commence work later in life are rather apt to resent being put to do some of the menial tasks in the garden, and they let it be understood by those over them that as apprentices they only expect to take part in bona-fide horticultural work.

As one who was trained under the old regime (although in my sixteenth year when I left school) I am of opinion that in the main the old methods of training cannot be bettered. I do not wish for one moment to convey that I was such a paragon in my youth that when riddling the furnace ashes in the dark, dirty stoke-hole, or spending

* An address given by Mr. W. W. Pottigrew, Superintendent of the Manchester Parks, at the North of England Horticultural Society's Conference at Harrogate, on Sept. 16.

days on end washing dirty pots, I regarded such work as necessary and ideal training for a young gardener. If the truth must be told many times during my first years of apprenticeship I asked myself with some bitterness what use had the learning of Latin, French, Euclid and algebra been to me when any illiterate boy could have done the work I was put to as well as, if not, very much better, than I. Looking back at it now, however, I consider that the experience was thoroughly good, as it gave me the necessary insight into, and appreciation of, the ordinary routine of a garden, and at the same time had a marked disciplinary effect. From my considered point of view no useful purpose can ever be served by differentiating between the practical work of the ordinary garden labourer and that of the lad who is being specially trained in horticulture. The so-called "gentleman"

I always feel that boys trained in public parks never get the thorough grounding in the fundamentals of garden work that similar lads get in private gardens. There is an atmosphere, as it were, about the private garden which is absent about the public park—an atmosphere which has a marked influence on the habits and even on the demeanour of the lads undergoing an apprenticeship. A public park is perhaps too vast an affair for a youngster to feel that it really matters how he does his work, for in the multitude about him his little doings hardly count. In the more limited surroundings of the private place it is entirely different, for a lad soon realises the necessity for performing his tasks to the best of his ability. To him the head gardener is a real live personality, whose approval or disapproval is of consequence to him. Even the gentry, the owners

to the Committee, and afterwards approved by the City Council in June, 1922:—

SUGGESTED SCHEME FOR TRAINING YOUNG GARDENERS IN THE MANCHESTER PUBLIC PARKS,

IN consequence of suggestions made at the last meeting of your Committee regarding the possibility of training young gardeners in the Manchester Public Parks, the Chairman has gone into the matter very carefully with the General Superintendent, and submits the following report upon the question, which he trusts will receive your sympathetic consideration.

In order to place his proposals in the right perspective he thinks it well to point out, that whilst a large city might appear at first sight to be the last place wherein to discover embryonic Vetches, Glennys, Rivers, or Hoggs, yet many gardeners of fame have originated in towns and cities. Even Manchester in the past has produced many noted horticulturists such as Horsfield, Barlow, Buxton and Leo Grindon, whose renown as plantmen and botanists has travelled throughout the length and breadth of the country, and to-day there meets regularly in Manchester

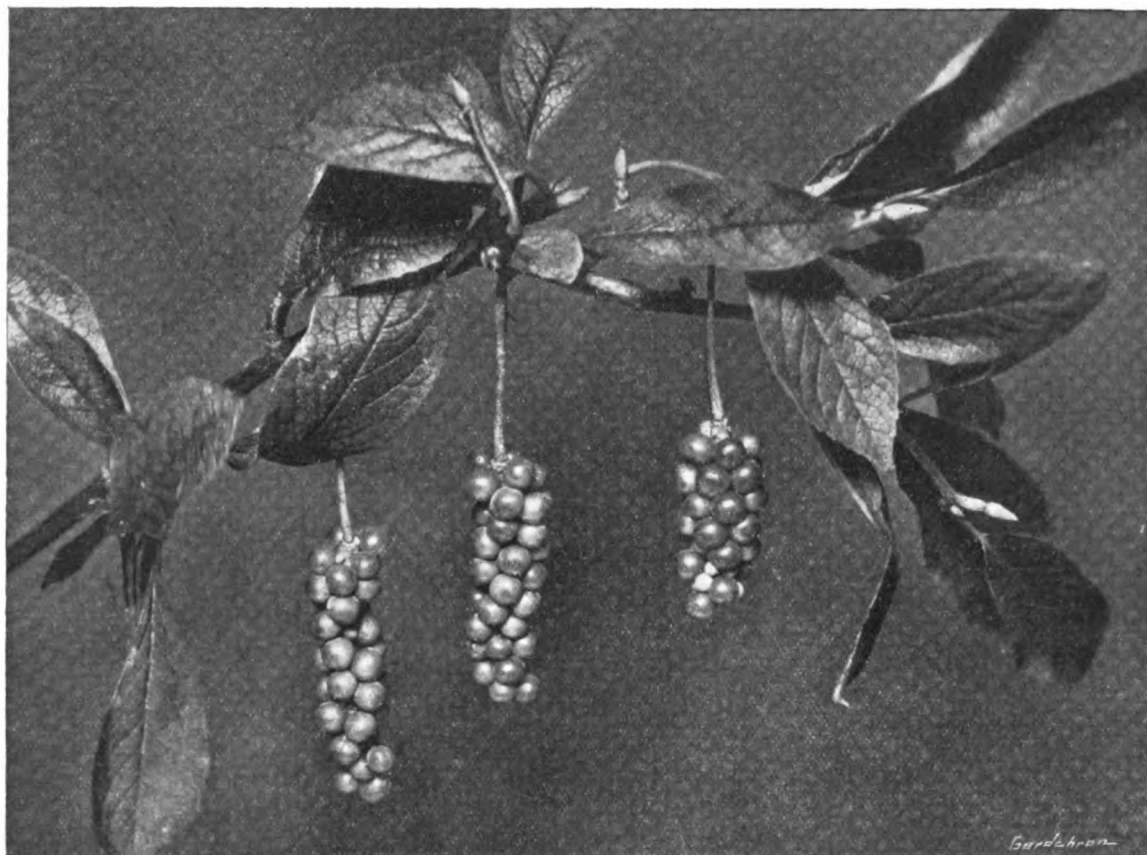


FIG. 108.—SCHIZANDRA RUBRIFLORA.

R.H.S. Award of Merit, September 22. Fruits coral-red in pendant clusters. Shown by the Hon. Vicary Gibbs (gr. Mr. E. Beckett), Aldenham House, Elstree (see p. 254).

apprentice—by which is meant the lad who gets the pick of the jobs—is hardly likely ever to make any great mark in the gardening world, largely because he has lost the moral effect derived from roughing it.

I am fully convinced that for the production of the very best type of practical horticulturist there has been, and is still, no better training ground than the first-class private gardens in this country. Although from the adult horticulturist's point of view public service is in many ways far more desirable than private, yet in my humble opinion the gardener who has received his early training in private service is, generally speaking, a far better craftsman than one who has only received his training in a public park. Had I a son taking up horticulture as a vocation, I would never think of sending him to a public park—however great the advantages it may offer—for his first start at practical work, always provided there was a chance of apprenticing him to a good gardener in charge of a private establishment. It may be unwarrantable prejudice on my part, but

of the place, are persons to be reckoned with, and, if possible, pleased. The private service atmosphere tends to make those brought up under it careful, tidy, neat and clean in the smallest detail of their work. In the well-kept grounds, in a private place, one rarely sees a heap of grass mowings left lying on a lawn over night, whereas in a public park it is not an uncommon occurrence to see heaps of grass lying about over a week-end. This I mention merely as a symptom of the difference I have suggested, not as a serious defect in public park management.

Notwithstanding all the drawbacks attendant upon the training of lads in horticulture in public parks, it is to be feared that in future public park authorities must play a far greater part in this work than has been the case in the past.

Until about three years ago no attempt was made in Manchester to train lads in the parks, but as the result of certain suggestions made to the Parks Committee by one of its members, the following report was drawn up and presented

a band of local Orchid enthusiasts, whose productions are quite on a par with those seen at the Royal Horticultural Society's Exhibitions in London.

Then again, another fact which ought to be borne in mind when considering this question, is that year by year the opportunities young men have of making themselves proficient in the art of gardening are becoming less and less on account of the large private gardens—the important training grounds in the past for young gardeners—gradually being broken up as a result of the great social changes now taking place in this country. Bearing the foregoing facts in mind it will be seen the suggestion that young gardeners might be trained in your parks, has much to be said in its favour.

So far as the Chairman is aware, your Committee have never taken advantage of the admirable facilities you undoubtedly possess in your parks for training young men as gardeners. Although in the past this was not of such vital importance, he considers that in view of the altered and altering conditions already alluded to it would be (to say the least of it) most unfortunate if boys desirous of following a horticultural calling were not allowed to take full advantage of the facilities you have to offer. Given the right type of youth there is no reason why, with the preliminary training they would receive in your parks, that Manchester boys should not be fitted to enter Kew, or similarly important horticultural institutions, and thereafter fill some of the most important public park or botanical garden appointments in this country, or in the Colonies.

It would be possible, for a beginning, to take at least four youths as apprentices, and in the course of time,

and as opportunity arose, to increase this number to perhaps eight or ten according to circumstances. It would be so arranged, however, that year by year the places of those leaving would be taken by new apprentices, so that at no period after the first season would the whole of the apprentices be in their first year. It is suggested, further, that the youths accepted for training should be well-educated, and about sixteen years of age, and that they pass through a three years' apprenticeship with the opportunity of remaining another year as improvers, after which they would be required to go elsewhere for further experience. In order that boys trained in your parks should be on an equal footing with continental gardeners—with whom most likely they would have to compete—it is essential that the theoretical side of their training should not be neglected, and there is no city where the opportunities for study would be greater than in Manchester, where there are so many well equipped libraries and technical schools. With a view to apprentices getting full advantage of the educational facilities (as is the case with young engineers) they ought to be permitted to attend a technical school, say one day a week, in order to study such subjects as elementary chemistry and physics, geology, plant diseases, insect pests, plan drawing, and kindred subjects. In addition, it ought to be made compulsory that they attend evening classes in order to improve their general education.

As the Committee will no doubt realise, it is not every head gardener who would be equally capable of training young apprentices, but the Chairman is assured that the practical instruction could be given at Heaton Park on the following subjects:—Vine and Peach culture; cultivation of salad plants; cultivation of herbaceous plants; propagation of hardy plants; budding and grafting; care of lawns; and at Alexandra Park—the cultivation of stove and greenhouse plants; Cactaceous and Orchid-

meetings, which are held once a fortnight throughout the winter, by kind permission of the City Council, in the Town Hall. On these occasions they (together with other members of the staff) have the privilege of hearing botanical and horticultural lectures given by recognised experts on their subjects.

That difficulties will arise and weaknesses appear from time to time, in the working of this or any other scheme, is only to be expected. One weak point in the operation of our Manchester scheme has thus early become apparent—that is, how best to enable the lads, on the completion of their three years' apprenticeship, to continue their training until such time as they are experienced enough to go to Kew, or take journeymen's posts. While it would be quite possible in a large concern such as the Manchester Parks Department to transfer a boy to a park some miles away from the one wherein he completes his final year's work, yet it would not always be expedient to do so, as, in my opinion, it is much better when a lad's training is completed that he should get an entire change of environment.

On the other hand, a lad of nineteen, with only three years' experience to his credit,

that is purely a matter for themselves, once they have had some experience outside of park work.

As to the posts these lads are in time likely to fill, who can really tell? But that they will, sooner or later, get suitably placed I have no doubt, always provided they make themselves by study and perseverance worthy of good positions. A number of lads who went through a similar training in the Cardiff Parks Department prior to the war have been quite successful in their calling. One is to-day the owner and manager of a large vineyard in Australia; one holds an important office in a Colonial Forestry Department; another is a chief of a noted American public park; while in this country one has charge of a large London cemetery; another is the head of a parks department in a popular watering place; yet another occupies an honourable position in a city parks department, and one is the manager of a flourishing nursery business. In all humility, I suggest that each and every one of these men would admit that they owe something of their success in life to their early training in horticulture, even although that training was provided in a public parks' department.

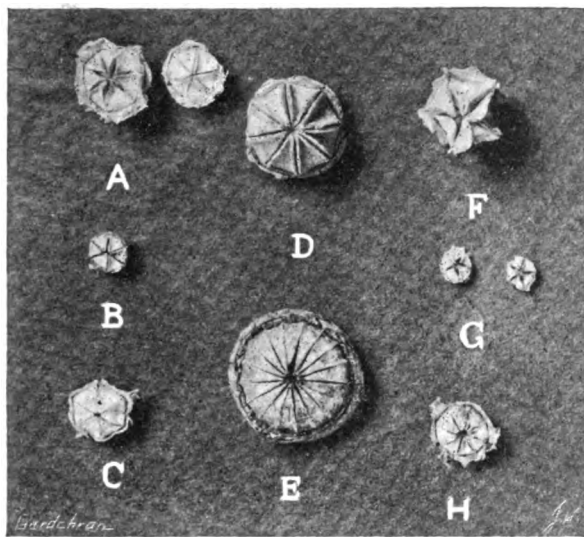
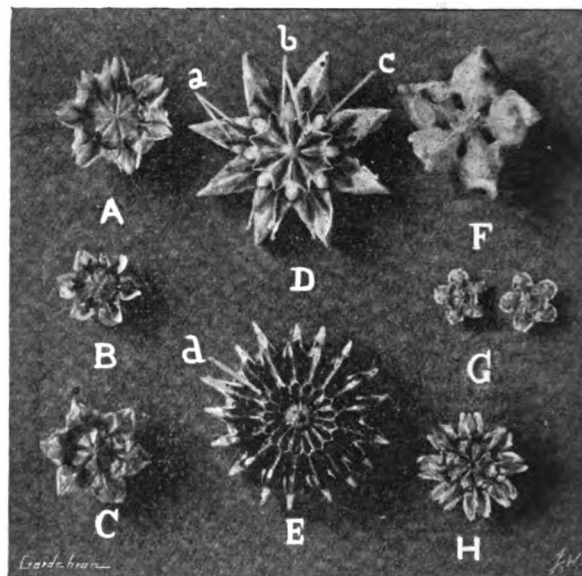


FIG. 109.—DRY CAPSULES OF MESEMBRYANTHEMUM:

(A) *M. Heathii*; (B) *M. pilosulum*; (C) *M. Shandii*; (D) *M. longum* (?); (E) *M. pomeridianum*; (F) *M. species*; (G) a new species of the *Sphaeroid* group; and (H) *M. species* allied to *M. Heathii*. All natural size.



Photos by E. E. Brown.

FIG. 110.—THE SAME CAPSULES AS IN FIG. 109 WHEN EXPANDED BY WETTING: NATURAL SIZE.

ceous plants; plants of botanical interest; the arrangement of floral decorations.

In addition, apprentices from time to time might receive instruction in forming, levelling and turfing bowling greens, tennis courts, and the laying out and planting of new grounds.

From the foregoing it will be seen that the facilities the Committee have to offer are of quite a valuable character, and it appears to the chairman that it would be a great pity if these were not taken full advantage of. He would be glad to have the Committees' support in the inauguration of a suitable scheme for training young gardeners.

TOM FOX, Chairman.

The Parks and Cemeteries Committee,
Town Hall, Manchester.

2nd June, 1922.

This scheme of horticultural training, which is, more or less, now in operation in our Manchester Parks, I very naturally regard as being conceived on fairly correct lines, and provided we are fortunate enough in attracting the right type of lads to participate in it, there is every likelihood of our turning out some who, no doubt, in time will maintain the high traditions of horticulture in this country.

Apart from the recognised official education facilities offered in Manchester, the lads at present training in the parks are exceptionally fortunate in that several members of the technical staff of the department devote a considerable amount of their spare time during the winter in conducting free evening classes on horticulture for the benefit of the trainees, and any other lads working in the parks who may care to take advantage of them. In addition to these classes they have also an opportunity of attending the Manchester Parks, etc., Department's Mutual Improvement Society's

is hardly likely, even in these changed times, to earn a competency, and so enable him to do without assistance from his home. In the case of lads whose parents are in comfortable circumstances there would, of course, be no great difficulty in providing further training, especially if it were possible to enter into reciprocal arrangements with parks departments in other cities regarding an exchange of young trainees as improvers, or, better still, to get them a year's experience in some nursery of repute.

In our dealings with youths, not so fortunately situated, there is, however, a real difficulty to be faced, and steps must be taken so that they suffer no financial hardship, nor lose the benefit of the course of training they have undergone in the public parks.

In conclusion, two questions naturally present themselves when discussing a subject of this character. First, what is really the ultimate object of the training in horticulture so briefly outlined in the course of my remarks this afternoon? And, further, what kind of posts are the Manchester trained boys, for instance, likely to fill?

My reply to the first is that what is attempted at Manchester is merely to give the lads an opportunity of getting a little insight into some elements of garden craft and science, so that they may be better fitted to do their work than might otherwise have been the case had they not received the training. No attempt is made to influence them one way or another in the choice of any special branch of horticulture—

MESEMBRYANTHEMUM AND SOME NEW GENERA SEPARATED FROM IT.

(Continued from p. 232.)

HITHERTO, when describing new species of *Mesembryanthemum* it has not been deemed necessary to describe in detail the structure of the flower, and that of the fruit is never described. In future, however, such details should be given, as it is often impossible to place some species in their correct affinity without knowledge of these details. For want of them there are some species described by Linné and many by later authors that I am at present quite unable to assign to any definite genus, because I have no material for the purpose, fruit especially being absent.

I have been more and more surprised during my examination of these plants that for more than a century and a half no one appears to have studied the structure of their fruit, and considering that these fruits are the most complicated in the Vegetable Kingdom, this is a rather remarkable circumstance. In every other Natural Order the fruit is used for distinguishing genera, and it cannot be any longer ignored and treated as if of no generic importance in this group of plants. To see and be able to properly examine the fruit of these plants it is necessary to soak them in water for a few minutes to cause them to expand the valves, for unless they are expanded their structure

cannot be seen. I have given an account of some of these fruits in the third article upon these plants in *The Gardeners' Chronicle*, 1921, V. lxx., p. 151, but here reproduce the figures of some dry (Fig. 109) and also expanded capsules (Fig. 110) to make my meaning clearer. When a fruit is placed in water or wetted by rain, the tissues absorb some of the water and it gets conducted to the expanding keels (Fig. 110 D, a) that extend along the valves. These are very hygroscopic and swell rapidly, and the lower part of the valves also must swell to some extent, and thus the valves are forced open and spread out flat or reflex. Sometimes, as shown at Fig. 110 H, the expanding keels develop broad-margined wings, which, in the closed capsule, are folded inwards, but as the valves open these also absorb water and expand and spread out flatly as shown in the figure. In many other cases, the marginal wings are converted into infolded or erect flaps, an example of which is somewhat indistinctly shown at Fig. 110 F. These flaps only occur in those genera that have axile placentation, and it would seem that in the closed fruit they more or less envelop the seeds, and in the act of expansion serve the purpose of pulling the seeds off their funicles or stalks. And as all the genera of this group having axile placentations have open cells to the fruit, without cell-wings, the seeds are easily washed out of the cells by the rain. The fruit at Fig. 110 F, has axile placentas and open cells, the black spots shown being seeds. All the other fruits represented at Fig. 110 have their placentas on the outer wall or floor of the cells, and the cells are roofed with cell-wings as indicated on the fruit D at b, while at c of the same figure is shown the tubercle that nearly closes the opening of the cells, and seems as if designed to prevent the escape of the seeds. What is the purpose of this tubercle? In all the fruits I have been able to examine that have this tubercle, it is always accompanied by stiff (not thin and flexible) cell-wings, which still further tend to prevent the escape of the seeds. How do the latter get out of the cells? I have failed to solve the problem: the answer to this question must be worked out by some one in South Africa.

When the valves are expanded some of these fruits are very pretty, star-like or flower-like objects, as may be seen from their appearance in Fig. 110. On account of its flower-like appearance, I have even seen the fruit of one species sold in London under the erroneous name of "Rose of Jericho," a name that is also often misapplied to other plants that expand when wetted and close up when dry. The true "Rose of Jericho" will be found referred to later on in a note under *Cephalophyllum dubium*.

A curious circumstance connected with the capsules of *Mesembryanthemum* is that in the year 1777 they were mistaken for Fungi by Hagen, who, in the *Berlinische Sammlungen zur Beförderung der arzneiwissenschaft*, V. ix., p. 133, founded his genus *Rediviva*, containing three species, upon the capsules of different species of *Mesembryanthemum*. See König and Sims, *Annals of Botany*, V. i., p. 365 (1804).

This is not the place to enter into the details of the remarkable structure of these fruits, but as I have found that certain combinations of structure possessed by them are usually associated with certain types of vegetative character, I have utilised the vegetative and fruit characters in combination in the following pages to divide the group into smaller genera. It must be understood, however, that my knowledge of the fruit of these plants is very imperfect, owing to my inability to obtain an abundant supply, yet where I have been able to examine the fruit of two or more species of the same group or genus as I now consider it, the combination of characters as given seems to indicate that they will be conformable with all the species placed under each genus.

As the main purpose of a plant's life is to produce fruit, it is an accepted conclusion that the fruit is one of the most (if not the most)

important of plant structures, and therefore where a general uniformity in its structure is found it indicates close relationship or common origin of the species having such structure. But where one or more of the organs of which the fruit is composed is undeveloped or suppressed or otherwise modified, it indicates a divergence from that relationship, and being usually accompanied by some difference in the floral structure or in the vegetative organs is regarded as of generic import. This is practically the basis upon which all large groups have been divided into genera, and is adopted here for the division of *Mesembryanthemum*, vegetative, floral and fruit characters all being taken into consideration.

And, judging from the seedlings of the few genera I have been able to experiment with, I think that characters derived from the mode of development of seedlings should not be neglected, as they sometimes may show or confirm the supposed relationship of two

that I think every group into which the genus is now divided should constitute a genus. But I do think, as Haworth over one hundred years ago stated, that several among them are undoubtedly good genera, and I here propose to separate and characterise as distinct genera some of the groups of which I have been able to examine living plants or adequate dried material, and thus have assured myself that they undoubtedly differ in structure and habit from the main characters assigned to the genus by Linné. Most of the genera described below are easily recognised at sight when out of flower by their habit alone, when once they are known, an advantage not possessed by the majority of genera in other Natural Orders.

Therefore, in constructing the key to the genera given below, I have considered vegetative characters (next to fruit characters) as of first importance, because they are always associated with a distinct floral and fruit



FIG. 111.—HYDRANGEA ARBORESCENS VAR. GRANDIFLORA AT GLASNEVIN

(see p. 268).

different genera. For example, when describing the genus *Rimaria* that will appear later on in these articles I had judged its relationship to be near that of the genus *Lithops*, and when the few seedlings I was able to raise of it developed, this view was confirmed, for I found that their manner of development from the cotyledonary to the adult stage is the same as that of the genera *Lithops* and *Conophytum* and not at all like that of *Mesembryanthemum* and most other genera that I have been able to experiment with: thus adding a further character whereby it is distinguished from those genera.

As previously stated, I do not propose here to divide the whole genus *Mesembryanthemum* as now constituted into separate genera, nor to re-define its sections as I think they ought to be defined, because I have not access to, nor can I obtain, the material necessary for this purpose, fruit and seed, and often sufficient flowers for dissection being absent. Nor do I wish to intimate

structure, and are always present, while flower and fruit are not always obtainable.

In writing of these plants I have also endeavoured to make the descriptions so that they can be understood by the average gardener as well as by the botanist, because I realise that there are large numbers who cultivate these plants that have no means of identifying any of them, and therefore these articles, if carefully studied, may be of some help to those who have not access to the rare books in which these plants are figured and described. At the same time it is impossible for me to here deal with all the known species, or even with all that are in cultivation, but in many cases I have given descriptions of some or all the chief species known or in cultivation, in others I can only enumerate them, and in the case of the vast genus *Mesembryanthemum* only a selection of a few kinds can be made. N. E. Brown.

(To be continued)

HARDY FRUIT GARDEN.

STORING FRUIT.

THE gathering and storing of fruit plays a very important part in the quality of that grown for winter use, therefore those who have charge of orchards, whether large or small, should necessarily study the best systems of keeping the fruit in the highest state of perfection.

One of the prime necessities of a garden in which fruit is grown to a considerable extent, is a well-built fruit room. An expensive structure is not required for the fruit may be kept wonderfully well in a dark room where it will not be subjected to sudden changes of temperature. A cellar is sometimes quite a good place, provided it is dry, but as usually constructed, cellars are too damp and incapable of being properly ventilated. If a room is built expressly for fruit it should, in dry soil, be partly below the ground level, with the soil banked up to the walls. On wet soils it is better to build on the level and bank soil against the walls. The roof should be double, or covered with a good thickness of thatch or Heather to assist in the maintenance of an equable temperature. The fruit should be kept in darkness, but to facilitate the examination of the fruits, windows provided with shutters should be fixed in the roof or sides according to the style of the building. It is an advantage to have the fruit room in a shady position, for a considerable number of soft fruits ripening in summer are very greatly improved in flavour by being placed in a cool room for a day or two, and in some cases the season of a particular fruit may be prolonged by gathering a portion of the crop and placing it in a cool, dry room.

The Plum season may be prolonged until quite late in the season by gathering the later varieties and spreading them out singly on shelves or benches so that they lie just free of each other. They will need examining occasionally and those showing signs of decay should be removed immediately, and any that appear damp should be wiped with a clean, soft cloth. The wiping will, of course, remove the bloom from the darker kinds, but it will be better to destroy in a certain degree the appearance of the fruits than to allow them to decay for want of a little attention. The Plums should be gathered carefully, with the whole of the stalk, when perfectly dry, and a dry, airy room is the best place for storing them. It may be added that if they are gathered, suspended with care, and partially dried, a most delicious sweetmeat and most valuable adjunct to the dessert table will result.

With regard to Apples and Pears which by a judicious choice of varieties may be had in perfection for at least nine months of the year, the main points are to gather at the right moment, handle the fruits carefully, and to examine them frequently during the winter for the purpose of removing all that show signs of decay. The sorts which attain maturity during the summer will simply require to be gathered and kept in the fruit room for a few days, as they need to be sent to table soon after they are gathered. The practice of gathering and using direct from the tree is hardly to be commended, for the flavour is seldom so good as when the fruit is gathered a few days before it is perfectly ripe and kept in the coolness of the fruit room till served. This applies with special force to Pears, which are more quickly affected by improper treatment than Apples.

Late autumn Pears and Apples should be gathered when they will part readily from the trees. They should be handled with nearly, if not quite, the same degree of care as would be exercised in handling a ripe Peach, for if bruised in the slightest degree the fruits will not keep well. Fruits from the same tree frequently differ materially in the time of ripening and it is, of course, essential that they should be used as they attain maturity.

The late winter and spring Apples and Pears require much care as they vary so that no precise rules can be laid down. Broadly, they are fit for gathering when they part from the tree with a gentle pull, and the proper time

may be anywhere from the end of September till about the third week in October, but it is wise to endeavour to complete gathering by the latter date, except in unusual cases, as sharp frost is frequently experienced before the end of the month. At the same time, it may be said that the fruit should be allowed to remain on the tree so long as possible. Late Apples and Pears do not deteriorate so quickly when ripe as the earlier ones, if left a little beyond their time, and they may therefore be stored in bulk, either heaped on properly constructed shelves or in boxes or barrels. Each variety, should, naturally, be kept in its separate quarter, and the fruits will require examining occasionally, as in some seasons a so-called March variety may be ready for use before the so-called February variety. Like many other things appertaining to gardening, growing and ripening do not rigidly follow the calendar.

When Pears are required for use the variety most nearly approaching maturity should be removed to a warm room and the fruit taken out and spread on the shelves of a warm cupboard. The warmth will accelerate the ripening process and also improve the flavour. Late, dry-fleshed Pears are wonderfully improved by the assistance thus afforded them, and some varieties, which are usually considered second-rate and never become really juicy if kept in a low temperature, are delicious when ripened in a temperature of between 60° and 70°.

Where large quantities of fruits are grown it may not be practicable to wrap any large proportion of the crop, but the use of oiled paper for the wrapping of choice fruits is to be highly commended as an aid in the preservation of high quality samples. Nuts and Walnuts may be kept in large flower pots or pans. They should be perfectly dry when stored, and be placed where they will neither be dried up nor become mildewed through dampness. Salt, sand, and sawdust are not uncommonly recommended for keeping nuts in, but they each have disadvantages. The salt makes the shells quite discoloured, the sand frequently gets into the teeth and is most unpleasant, and the sawdust frequently imparts a disagreeable flavour of the wood from which it has been obtained. With Filberts, which are sent to the dessert table in their husks, it is particularly important to keep them perfectly clean and presentable. *W. Auton.*

VEGETABLE GARDEN.

THE CULTIVATION OF MUSHROOMS INDOORS.

HOUSES of different types are utilised in the cultivation of Mushrooms, and in most cases results are very satisfactory; the manure being in a suitable condition when the beds are formed is the chief essential to success. The aspect and situation of houses vary, however, and this has to be taken into consideration by the grower. For instance, when the house is on the ground level, with benches above, more attention is required in damping the floor and water pipes to provide a suitable amount of atmospheric moisture, unless troughs filled with water are placed over the water pipes, in which case the piping would need to be kept fairly hot to cause the water to evaporate rapidly, and strong heat is not desirable for Mushrooms.

Where the house can be kept moist and warm by the ordinary means the best results will be obtained. Where the floor of the house is sunk a few feet below the ground, or where the Mushrooms are forced wholly underground, the conditions are more natural to this crop, and much less attention will be required. Such houses, provided they are roomy, will enable Mushrooms to be grown over a long period, and they are also useful for the forcing of Sea Kale and the blanching of salads through the winter. When houses of this character are well thatched with straw or Heather, they do not require very much artificial warmth. For an underground house a flow and return pipe are sufficient to maintain the necessary temperature, indeed, for late spring and early

autumn supplies, the house would be sufficiently warm naturally, and the Mushrooms grown under such conditions are more fleshy and of better quality than when much fire-heat is used.

I have cultivated Mushrooms in houses with beds on the level and on benches, and have also grown them in sunken beds and underground. In the former cases, that is, on the level and benches, I find it necessary to have the manure in a much moister condition and with a stronger amount of heat from fermentation, spawning such beds at a temperature of about 75°. In most cases, the spawn has run quite satisfactorily and the crops been good. There is a danger that if the moisture is deficient the spawn will not run satisfactorily, which means artificial watering to bring the bed again into a suitable condition, and this often kills much spawn, with the result that the crop is unsatisfactory. In the case of the bed being sunk below the soil or wholly underground the manure should be in a normal condition with plenty of heat in it, and, as the bed will not be so liable to dry out, watering will rarely be necessary, the natural damp of such houses being sufficient.

In preparing the manure for the beds it should be selected when quite fresh from the stable, put in an open dry shed fairly thinly, and allowed to remain for a few days to sweeten. When sufficient dung has been gathered for the making of a bed it should be thrown into a heap and turned every other day until the rank gases of fermentation have passed off. The manure should be placed firmly in position to make the bed, ramming or treading it. When the bed is completed a thermometer should be placed in the centre to a depth of about three inches, allowing it to remain for two days, when it should be examined daily, and so soon as the temperature has declined to 75° the bed will be ready for spawning. The spawn should be perfectly fresh, and if it is of good quality, plenty of white threads will be noticed in the "brick." The latter should be broken into some eight to ten pieces and each portion inserted in the bed three inches deep and about nine inches apart.

When the spawning is completed the bed should be made level, beaten firmly, and covered with a layer of one-and-a-half inch of good fresh loam in a fairly moist condition. The soil should be beaten level with the back of a shovel, and after a few days has elapsed the soil in turn should be covered with a layer of hay, which should be allowed to remain until the Mushrooms begin to appear, when it should be removed. Should the hay become excessively damp through moisture arising from the bed, it should be removed and some fresh hay substituted. *E. Neal.*

A POTATO TRIAL.

LAST year I grew fourteen varieties of Potatoes in a cropping trial, from seed tubers which were bought direct from the county of Ross. They all received similar treatment and all yielded well. Good and typical seed sets were saved from each variety for cultivation during the present year. The crop has now been lifted and twenty-five roots from each variety weighed. I append a table giving the results:—Great Scot, 63 lb.; Kerr's Pink, 58 lb.; Up-to-Date, 56½ lb.; Arran Chief, 54 lb.; King Edward, 54 lb.; Majestic, 52½ lb.; Tinwald Perfection, 51 lb.; Rhoderick Dhu, 50½ lb.; Arran Comrade, 43 lb.; Irish Chieftain, 22 lb.; Bishop, 21 lb.; Katie Glover, 20 lb.; Golden Wonder, 19 lb.; K. of K., 17 lb.

One must regard the latter five varieties as distinctly disappointing under good garden conditions, for Irish Chieftain, which is the highest of the five, returns five tons sixteen cwt. eight lbs. per acre only. Potatoes are now selling at a price round about £6 per ton, f.o.r. Such a yield at such a price leaves very little profit for the grower. The crop was carefully inspected with a view to ascertaining the presence of disease and none was recorded, therefore no organic malady hampered the development of the plants. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

Phyteuma orbiculare.—I was much interested in Mr. Ralph Arnold's note on *Phyteuma orbiculare*, in *The Gardeners' Chronicle* of September 19. In it he states that the "plant is distributed over Southern Europe." This is quite correct, but it is also a British native. I have found it growing on Epsom Downs, and I believe it is found also in Kent and Wiltshire. There are several plants in our Natural Order beds at the college, which are growing well but have failed to flower this year. *J. W. Watson, Head Gardener, Armstrong College, Newcastle.*

Belladonna Lilies.—Five years ago we planted *Amaryllis Belladonna* in a shallow border, sixty feet long, under a low wall, facing south. This year we have had three hundred spikes of lovely flowers, thanks, in some measure, to the hot, dry weather of June. *A. B. Wadds, Englefield, Reading.*

Cyaniding.—With reference to your article by *E. C.* in the issue of August 1 on a new method

and as this is our first experience of cyaniding I would be very grateful if *E. C.* or any other of your readers who have tried it with success can help me. *W. E., Sussex.*

Portugal Laurel at Norton Manor.—An error has crept into my note on "Big Trees" (p. 207). The Portugal Laurel at Eridge Castle Gardens is not twelve paces round as stated, but one hundred and twelve paces round, being the largest single tree I have ever seen. *G. Abbey.*

The Cactus Dahlia.—"With very few exceptions, the Cactus varieties are absolutely useless as garden plants." This expression over the initials of that well-known and able contributor, *H. S.*, in a recent issue should be printed in big red letters at the head of every Dahlia list. His courage is admirable. He writes that which has been at the back of the minds of scores for a very long time. The majority applaud him, I am sure. The Cactus Dahlia is a delusion and a snare—indubitably; and the sooner the garden-loving public know it, the better for the popularity of the Dahlia and its trade. As a flower to exhibit, it is, of course, extremely beautiful in colour, exquisite in form, wonderful in size.

SOCIETIES.

ROYAL SCOTTISH ARBORICULTURAL
(ABERDEEN BRANCH).

UNDER the most favourable conditions and in charming weather the members of this branch held their autumn excursion to Glen Tanar, the Aberdeenshire seat of Lady Glentanar and her son, Lord Glentanar, scions of the great Coats family of Paisley thread fame. There was a large and distinguished gathering, including Sir John R. Gladstone, Bt., of Fasque, the president of the parent society; Capt. Nicol of Ballogie, Mr. S. T. Gammell of Countesswells, Mr. W. Low of Balmakewan, Mr. G. H. Russell of The Burn, Mr. John Michie, M.V.O., of Blairs, and a host of factors, nurserymen, and foresters from a radius of over a hundred miles round. Mr. C. S. France, president of the local branch and the veteran authority on forestry in the north of Scotland, headed the party.

Motoring out from Aberdeen, a distance of some thirty miles, the large gathering was met at Aboyne by Lord Glentanar, his factor, Mr. John Barr, and his head forester, Mr. James Smith. Kindly and hearty salutations over, the party proceeded to the Craigendinnie portion of the Glen Tanar estate, and here Mr. Barr gave an outline of the planting operations carried out during the past five years, comprising part of the larger scheme embracing about 2,000 acres of land suitable for planting purposes, which had been closed with a deer fence. The plants used here consisted chiefly of Scots Fir, with about fifteen acres of Douglas Pine on the lower portion of the ground, and common as well as Sitka Spruce on the lower portion as well as Sitka Spruce in some of the damper portions. Rising to an elevation of 1,000 feet above sea level, this portion of the estate also included a section of Larch which was planted out in the autumn of 1921 and 1922, and comprises Japanese Larch and common Larch. The ground had proved to be well-suited to the species, for, notwithstanding the exposed situation, from the first the plants had done exceedingly well, and were now well-established and putting on considerable growth. A small area of natural-grown Scots Fir illustrated the good results to be obtained under natural conditions where the ground is protected from vermin.

From thence the company proceeded to that part of the estate near the Tower of Ess. Here particularly fine and clean grown Scots Fir of about seventy-five years of age were found, and a fine object lesson on the excellent results to be gained by systematic thinning.

Beltotie, a wood of some 800 acres, was next visited. Of about sixty-five years of age although not quite so lengthy and clean grown as at Tower of Ess, the trees had the appearance of developing into splendid timber. The estatenuery at Hillhead was the next objective. Standing some 600 feet above sea level, it was explained that this nursery was not run for exhibition but entirely for utility and practical purposes. It is well stocked with an excellent variety of useful plants in all the different stages, and although only formed about five years ago, the nursery may still be said to be in its initial stages of development. By the end of last season over half-a-million plants had been reared and planted out. An inspection was then made of a block of timber-built cottages erected for the occupation of retired and pensioned-off servants of the estate. Beautifully situated and picturesque in construction, the cottages are built entirely of home-grown manufactured timber on concrete foundations, with a layer of breeze concrete underneath the floors to prevent damp. The roofs consist of Cedar shingles brought from Quebec, and the front and gable walls are also lined with shingles, giving the *ensemble* an artistic mottled appearance which fits beautifully into the surrounding landscape. Knochie Wood, which forms an admirable background to the mansion house of Glen Tanar, was next inspected. The trees here are about 120 years old, exceptionally

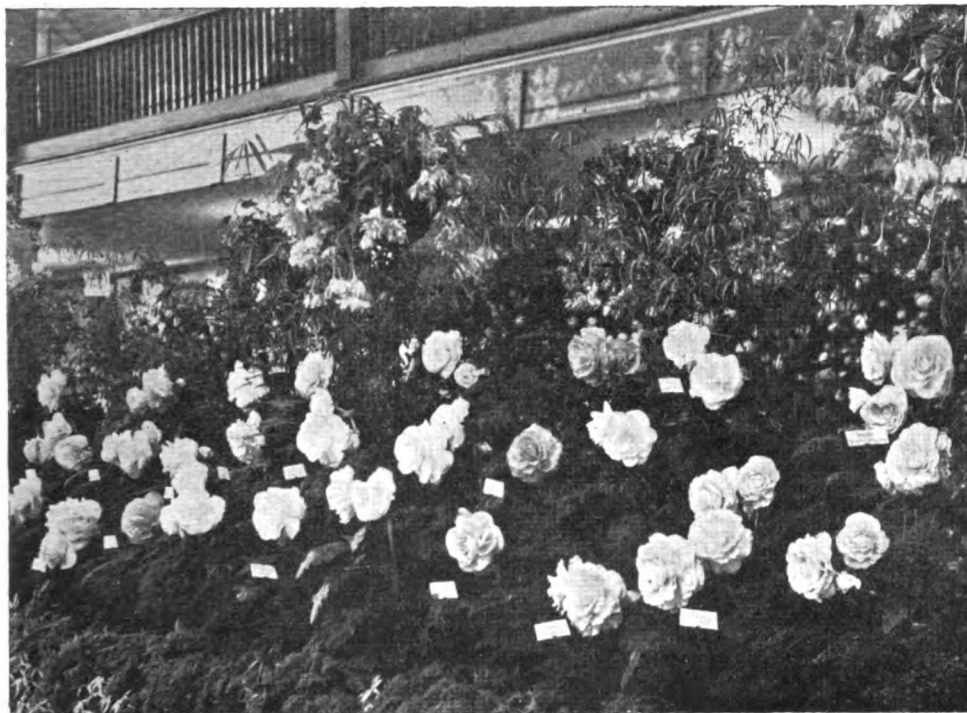


FIG. 112.—PART OF MESSRS. BLACKMORE AND LANGDON'S SILVER CUP GROUP OF BEGONIAS AT HOLLAND PARK HALL, SEPTEMBER 22

(see p. 255).

of cyaniding, we have tried calcium cyanide here but without any success whatever. The house experimented on was a Peach case containing Tomatos badly attacked by white fly. Our calcium cyanide was procured from a well-known firm and came in a sealed bottle; it was a greyish-black powder. Conditions for fumigating were then made as nearly as possible to those stated. The house is in good condition as regards leaks, and sacks were placed at the bottom of the doors. I gave the whole house a good syringing in the morning, damped floor and trellis at mid-day, and again at 3 p.m. (summer time), when I closed the house, at the same time turning on a little heat in the hot-water pipes. At 4 p.m., in a temperature of from 65° to 70°, the cyanide was dusted over the floor at the rate of a quarter-of-an-ounce per thousand cubic feet, but an hour later I could detect no smell whatever, and the following morning the white fly was as lively as ever. I should add that the powder had become set like cement. I have repeated this operation three times with no better result,

But to exhibit flowers, most of which hardly get beyond the foliage, whose stem is so weak, and head so heavy that scarcely a bloom can be shown unless head and stem are supported by wire, and to offer and sell such varieties as garden plants will soon undo all the good Dahlia growers are doing. It puzzles me that the great exhibitions should continue to countenance the practice—should admit flowers on crutches! And, most surprising of all, that the R.H.S., which in setting out to eliminate the faulty varieties of Cactus Dahlias gave such splendid lead, should now give them recognition. Let exhibitors exhibit them if they will—the flower is a delight there is no doubt; but equally let them be honest, and tell the buying public that they are utterly useless as garden plants, and as exhibition flowers are only useful when wired head and stem. Or if they will not, then exclude their "Beau Brummels" from the exhibition tent. If the societies will only prohibit wiring in any form, few Cactus varieties can appear, and at one stroke the desired effect will be achieved. *Horticulteur.*

clean grown, well-matured, and in fine condition for manufacturing purposes. Motoring two miles farther up the forest road, the party saw some of the old original timber, and the effects of the ravages caused by the great forest fire which occurred here and lasted for weeks a few years ago, when some 1,400 acres of growing timber were completely destroyed. This area has now been cleared of the burnt stumps.

The visitors were then entertained to lunch in the ballroom at Glen Tanar House, where they were joined by Lady Glentanar and her two grandchildren, who are also the grandchildren of the Duke of Wellington. Mr. C. S. France, president of the Aberdeen branch, presided, and warmly thanked Lady and Lord Glentanar, on behalf of the company for the kindness and hospitality extended to them that day. Lord Glentanar, he declared, was one of those who showed an example to a great many proprietors. He was the possessor of a splendid estate, and they had seen the wonderful hills round about, some of them stocked with timber, others calling upon them to plant more and Lord Glentanar was responding to that call in a most remarkable manner. From what they had seen that day they quite easily perceived that Lord Glentanar was one who intended to go forward and have everything up-to-date. His Lordship was a member of their branch, and not only so but a member of the Committee, which showed the deep interest he is taking in forestry. Lord Glentanar thanked the company very heartily on behalf of his mother and himself, and paid a warm tribute to Mr. France, declaring he knew none with a more mature and longer experience of forestry than he. Sir John Gladstone also made a few complimentary remarks, after which a business meeting was held and several new members admitted. The excursion was in the capable hands of Mr. George D. Massie, advocate, Aberdeen, the secretary of the branch, under whose genial guidance a happy, successful and instructive day was spent.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

THE last temporary horticultural exhibition organised by the French National Horticultural Society in connection with the Exhibition of Decorative Arts, in Paris, was mainly dominated by *Gladiolus*. As in preceding exhibitions, the firm of VILMORIN-ANDRIEUX occupied the whole central space in the pavilion with an immense and artistically-conceived decoration. The principal characteristic of the display was four supports abundantly furnished with sheaves of hybrids of *Gladiolus primulinus*, with, on either side, beds of *Gladiolus* and cut Dahlias. For the rest, there were annual and biennial plants, double orange, Indian Rose, pink and mauve *Petunias*, and at each end a complete series of dwarf *Antirrhinums*. These were arranged in separate colours in parallel lines, so that each colour retained its full value. There was also, in pot form, a very pretty *Balsam*.

Among other varieties of *Gladiolus* were *Strasbourg*, a *Gandavensis* with long spikes of pink flowers; *Metz*, with large, reddish magenta blooms; *Etincelle*, another *Gandavensis* with white flowers, flesh tinted; *Mulhouse*, pinkish white; *Innocence*, white, touched with flesh tint; *Beauté de Juillet*, a curious pink, marbled with slatish violet; *Albert the First*, with a large white, pink tinged flower; *Electric*, a violet-coloured *Lemoine* hybrid; *Desdémone*, a *Nancieanus* with very large pink flowers; etc. Those which attracted the most attention were the delicately hued *primulinus* sorts such as *La Lys*, sulphur yellow; *L'Yser*, orange-scarlet; *La Vezouze*, canary; *L'Exuette*, cherry-red; and *L'Helpe*, salmon-pink.

MESSRS. CAYEUX ET LE CLERC, of Paris, had a display at the entrance, of *Cannas*, cut *Phloxes*, *Delphiniums*, etc. They also had a very beautiful exhibit of *Gladioli*, among which were principally noted *Red Emperor*, a very fine *Nancieanus*, dark scarlet-red, and *Mrs. Velthuys*, with a very large flower, also of scarlet. In

the foreground were *Godetias* of the varieties *Duke of Fife* and *Duchess of Fife*, and behind, a little bed of a pretty new *Begonia*, *Matador*, a dwarf *semperflorens* hybrid with bright pink flowers.

MESSRS. FÉRARD, of Paris, were at the other end of the pavilion, with a decorative exhibit of *Gladioli* in cut flower form; *Maréchal Pétain*, a salmon-pink *Nancieanus*, brighter in the centre; *War*, a bright red *Gandavensis*; *Miss Edith Cavell*, white, streaked with pink; *Niagara*, a pinkish-yellow *Gandavensis*, and others, all arranged in vases and artistic pots supplied by the firm of Tissot, of Paris. In the front was a little cemented basin furnished with *Nymphaeas* and other aquatic plants.

The firm of VELTHUYS, of Hillegom, Holland, sent a good display of *Gladioli*, nearly all having the *Haarlem* Certificate of Merit. Among others were noted *Adélaïde de Luxembourg*, a bright pink *Gandavensis*; *Liebesfeuer*, bright red; *Marmoon*, also a *Gandavensis*, pink in colour with garnet spots; and *La Beauté*, a beautiful white *Gandavensis* hybrid.

Dahlias were also abundantly represented. The firm of NONIN, of Châtillon sous Bagneaux, showed some lovely varieties, such as *Gladys Sherwood*, white; *Augustinus*, pink; *Soleil Couchant*, jaune rosé; *Orange King*, orange-red; and *Mme. Diesny*, mauve pink.

MESSRS. VILMORIN-ANDRIEUX had also some fine Dahlias of the decorative section, such as *Boston*, scarlet; *Roger de Vilmorin*, pale pink; *Jongleur*, violet; *Querelleur*, mauve; *Orange Bowen*, red; *Insulinde*, yellow; and *Emma Groot*.

MM. VALLERAND, of Taverny, sent a fine exhibit of *Achimenes* and *Tydeas* (among the latter, *T. President Chandon*, scarlet), and hybrid *Naegelias*, as well as some lovely tuberous *Begonias* and *Gloxinias*.

M. WEISS' exhibit from St. Cloud also deserves mention; he showed little specimen *Cacti* in vases and artistic bowls, and also dwarf Japanese trees. M. THUILLIEUX, of La Celle St. Cloud, had a fine exhibit of cut *Roses*; these flowers were also shown effectively by M. LÉVÊQUE, of Ivry, and M. LÉCOLIER, of La Celle St. Cloud.

There was an important exhibit of fruit trees in pots, loaded with fruits, from the firm of NOBLOT BRUNEAU, of Bourg le Reine, including Apples, Figs and Plums, and also collections of fruits in dishes.

Only one exhibit of Orchids was sent, by MM. VACHEROT ET LECOUFFE, of Boissy St. Léger, and it included some very fine plants; *Laelio-Cattleya Ekla*, with yellow petals and purple labellum; *Cattleya gigas*, with very large flowers labellum deep pink; a fine specimen of *Vanda coerulea*; *Selenipedium grande*, with very long petals; *Cypripedium Kubele grandis*, with a white lower sepal; and many others.

At one of the meetings of the Société d'Horticulture in August Messrs. VILMORIN showed a new hybrid *Gladiolus*, *G. primulinus* *Colombe*, the first, I believe, which has an absolutely white flower and white stamens. A.M.

HORTICULTURAL TRADES' ASSOCIATION.

THE visit of this Association to Edinburgh was, unfortunately, marred to some extent by wet weather, but, synchronising as it did with the International Show of the Royal Caledonian Horticultural Society some relief was afforded from what otherwise might have been still more disagreeable conditions.

The official part of the programme opened with a dinner given in the North British Station Hotel on the evening of September 10, by the Scottish Seed and Nursery Trade Association, with Mr. David Bell, the President, as chairman. The loyal toast having been duly honoured, the principal guest, Sir Heroert E. Maxwell, Bart., proposed that of "The Horticultural Industry." Sir Herbert paid a high tribute to the nursery and seed trade for the prompt way in which the distribution of new and useful plants was carried out by them, in illustration of which he instanced the cases of the Sitka

Spruce, when the timber of this species came to be recognised as being invaluable in the construction of air craft in the Great War, and the distribution of seed to the Irish agriculturists after the great failure of the Potato crop in 1879. The toast was replied to on behalf of England by Mr. E. Laxton, of Ireland by Mr. J. J. Donough, and of Scotland by Mr. W. Cuthbertson, who remarked that the future of the industry would just be what the trade made it, and what was got out of it would just be equivalent to what they put into it. The other toasts were: "Our Guests," proposed by the Chairman, and responded to by Mr. E. J. Deal, president of the Horticultural Trades' Association; "The Royal Horticultural Society," proposed by Mr. R. Oldham, and replied to by Sir W. Lawrence; "The Ladies," by Mr. John Cairns, and responded to on their behalf by Mr. E. A. Bunyard; and "The Chairman," by Sir Robert Greig, Chairman of the Board of Agriculture for Scotland. A splendid programme of vocal and instrumental music was provided, and not the least interesting part of the proceedings was the bringing in of the haggis by a procession of waiters headed by a piper in Highland costume.

On the afternoon of the following day (Friday) a visit was paid to the nurseries of Messrs. Dicksons and Co., 20, Charlotte Square, at Craigmillar, and of Messrs. Dobbie and Co., at Craigentiny, Portobello. Owing to the wet weather the nurseries were not, of course, seen under the best of conditions, but notwithstanding this, much of interest to the visitors was seen, and an additional attraction was provided by linking up with it a drive in motor char-a-bancs round the outskirts of the city, starting from St. Andrew Square and ending up by a tour of the "Royal Mile" and the Castle esplanade, and thence back to the starting point.

On arrival at Craigmillar, the party was received by Mr. W. H. Massie, the senior partner of Messrs. Dickson and Co., who gave them a hearty welcome. This firm, it may be noted, will celebrate its bicentenary three years hence (1928), and it has been in occupation of the Craigmillar nurseries for some thirty years, city extensions having compelled it to go further afield. The Craigmillar nurseries are chiefly appropriated by forest trees under normal circumstances, but, like many more, they have suffered considerable disorganisation through the war, and in this respect are now only returning to the *status quo*. Large quantities of seedling *Conifers* however, were observed, as well as extensive breaks of transplanted forest trees of various kinds. Large stocks of English *Yews* and golden *Privet*, both rather scarce plants at present, were also seen, and among other things noted were big stocks of the Silvery Reed Grass of New Zealand, now being largely used as a covert plant for game, and the true cricket-bat Willow, for the timber of which there is a large demand, and of course the firm also hold large stocks of fruit trees and *Roses*. The healthy state of the plants and, notwithstanding the recent heavy rains, the clean state of the nurseries, were favourably commented upon. On the conclusion of the visit, a hearty vote of thanks was accorded to Messrs. Dicksons and Co. on the motion of Mr. W. Cuthbertson.

Continuing the drive by way of Duddingston, Craigminty was soon reached, and the party was conducted over the extensive nurseries of Messrs. Dobbie and Co., Ltd., by Messrs. R. Fife and W. Cuthbertson, directors of the firm. In these nurseries the leading feature is *Roses*, to which twenty acres are devoted, ten under maidens, and ten under budded stocks, and when it is stated that there are some 30,000 plants to the acre, the immensity of the numbers may be realised. Messrs. Dobbie and Co. have great faith in the *Rosa laxa* stock, and this is exclusively used for budding. The Dahlias rank next to the *Roses* here, and large numbers of varieties of each of the types were seen. Although the day of the old show Dahlia is supposed to be past, it was interesting to know that many varieties of these are still propagated,

which would not, of course, be the case if there was no demand for them. But, all the same, the Collettertes and decoratives were very largely in the ascendant. Early-flowering Chrysanthemums are also largely grown, and immense quantities of bedding out and other flower garden subjects are raised under glass in spring. Among the Roses many fine varieties were noted, and special note may be made of a large break of the new Hybrid Tea John Russell, and of a new variety named Duchess of Atholl, resembling somewhat in colour an intensified Madame E. Herriot.

The party was conducted over the splendidly equipped offices and warehouses, and in one of the apartments tea was provided for them. Mr. Cuthbertson and Mr. Fife welcomed the visitors, and expressed the pleasure it gave the directors to entertain them, and on the call of Mr. Laxton, the new president of the Horticultural Trades' Association, a very hearty vote of thanks was accorded to Messrs. Dobbie and Co.

The arrangements for the outing were in the hands of Mr. Ian C. Menzies, W.S., the Secretary of the Scottish Seed and Nursery Trade Association, and were carried through most efficiently.

ROYAL HORTICULTURAL.

SEPTEMBER 29 and 30.—According to the *Book of Arrangements* the various Standing Committees of the Royal Horticultural Society were due to meet on September 29, notwithstanding that the Fruit Show was being held on that and the following day. Evidently numerous members believed there would be no meetings of Committee, other than the Fruit and Vegetable Committee, on this occasion, and so unless they were particularly interested in fruits they did not attend. Moreover, judging by events, exhibitors of novelties were under a similar misapprehension, as they also absented themselves.

The fruit show was a capital one, and although the Grapes fell considerably behind those shown recently at Edinburgh, the Apples and Pears were excellent, and shown as abundantly as in some seasons when crops were far heavier than this year. Competition was good but the attendance on the opening day was poor.

Orchid Committee.

No Orchids were forthcoming on this occasion and, apparently, the members of Committee did not expect any. So far as we could discover only Sir Jeremiah Colman and Mr. Charles H. Curtis signed the attendance book.

Floral Committee.

Section A.—*Present*: Mr. H. B. May (in the chair), Mr. Chas. E. Pearson, Mr. Andrew Ireland, Mr. J. B. Riding, Mr. W. Howe, Mr. W. B. Gingell, Mr. W. B. Crane and Mr. David Ingamells.

Section B.—*Present*: Mr. C. T. Musgrave (in the chair), Sir Wm. Lawrence, Mr. G. Harrow, Mr. Jas. Hudson, and Mr. T. Hay.

AWARD OF MERIT.

Potentilla arbuscula.—A late-flowering, low-growing Siberian species, with yellow flowers. There was not a quorum of the B Section of the Floral Committee, but the recommendation of an Award to this *Potentilla* was endorsed by the Council. Exhibited by Mr. C. T. MUSGRAVE, Godalming.

Fruit and Vegetable Committee.

Present:—Messrs. C. G. A. Nix (Chairman), A. H. Pearson, E. Harriss, W. Poupert, Geo. F. Tinley, S. B. Dicks, W. Crump, H. S. Rivers, J. Cheal, P. C. M. Veitch, A. Metcalfe, W. H. Divers, G. Woodward, A. C. Smith, J. C. Allgrove, H. Prince, E. Neal, J. G. Weston, T. Pateman, H. Markham, W. H. Divers, A. N. Rawes and J. Wilson.

Several varieties of Apples were submitted for award but none was equal to sorts already in cultivation, the most promising being Messrs.

LAXTON BROS' new Lord Lambourne, which is very pretty in appearance, juicy and sweet, but of no great merit in regard to flavour.

Messrs. LAXTON BROS. showed the varieties Exquisite (Cellini × Cox's Orange Pippin), and Prince (Wealthy × Cox's Orange Pippin), in competition for the Bunyard Cup offered for the most promising seedling not previously exhibited at the R.H.S. shows. Heath Pippin was also exhibited in this competition by Mr. H. A. DIMMICK, Locksheath, Sarisbury Green, Southampton, but none was considered of sufficient worth.

It has been the practice at these autumn fruit shows to exclude miscellaneous exhibits, but on this occasion there were several collections not for competition. THE BARNHAM NURSERIES showed a collection of Apples for which a Silver-Gilt Hogg Medal was recommended. Mr. H. HEMSLEY, Crawley, also showed numerous varieties of Apples for which a Silver Hogg Medal was recommended, and a similar award was made to Messrs. DANIELS BROS. for a collection of Apples and Pears, and to the HORTICULTURAL COLLEGE, Swanley. Very fine pot fruit trees and fruits were shown by Mr. J. C. ALLGROVE, while Messrs. H. LANE AND SON, Berkhamsted, showed vines and hardy fruits, and Messrs. T. RIVERS AND SON, some choice Apples, Plums, and a few vines in pots, all of these exhibits being recommended Silver Hogg Medals. It was unfortunate that the fine fruits intended for competition from LADY EVA WYNDHAM QUIN's gardens, Castletown, Carrick-on-Shure (gr. Mr. Goff) were entered too late for the competitive classes. The Apples and Pears were very good and such sorts as Charles Ross, Yorkshire Beauty, Baron Wolesley, and St. Everard Apples, and Louise Bonne of Jersey and Doyenné du Comice Pears were very fine. The Committee recommended Mr. Goff a bronze Hogg Medal.

Perhaps the most interesting of these miscellaneous exhibits, was a collection of Grapes shown by Messrs. BUNYARD AND CO., for which a Lindley Medal was recommended. All the varieties had been grown in a greenhouse without artificial warmth, and were as follow:—(Black) Strawberry Grape, Black Prince, Gamy Noir, and Esperione. (White) Buckland Sweetwater, Reeve's Muscadine, Foster's Seedling, Golden Drop and Royal Muscadine. Judging by appearances, only the three finest varieties were Black Prince, Esperione and Royal Muscadine.

DESSERT FRUIT.

Only two competitors came forward in the class for a collection of nine dishes of ripe dessert fruits in not fewer than six kinds. The first prize, a Silver Hogg Medal and £6 were won by Capt. M. DRUMMOND (gr. Mr. L. Smith), Cadland Park, Southampton, with heavy bunches of Black Hamburgh (2), and Muscat of Alexandria Grapes, one of the latter lacking in colour; Sutton's Superlative Melon; Late Devonian and Lord Palmerston Peaches; James Grieve Apple; Doyenné Boussoch Pear; Coe's Golden Drop Plum, and exceptionally large Negro Largo Figs. Sir CHARLES NALL CAIN (gr. Mr. T. Pateman), Brocket Hall, Hatfield, gained the second prize with fine clusters of Alicante and smaller well-berried bunches of Muscat of Alexandria Grapes; Superlative Melon; Doyenné du Comice and Marguerite Marillat Pears; Sea Eagle and Salwey Peaches; and Ribston Pippin and Cox's Orange Pippin Apples, finely coloured.

There was no entry in the class for six dishes of ripe dessert fruit.

GRAPES.

There was but one entrant in the class for a dozen bunches of Grapes in six varieties. This was Sir WILLIAM LAWRENCE, Bt. (gr. Mr. J. Brown), Burford Lodge, Dorking, and he was awarded second prize. The bunches were of fair size, and consisted of Appley Towers, Chasselas Napoleon, Madresfield Court, Lady Hutt, Gros Maroc, and Muscat of Alexandria; the bunches of Madresfield Court lacked colour, but the bunches of Lady Hutt were very fine.

The best three pairs of bunches were exhibited by G. MAYER, Esq. (gr. Mr. W. Sayer), Wistler's

Wood, Woldingham, and the set consisted of nicely coloured clusters of Prince of Wales, Muscat of Alexandria and Madresfield Court.

Capt. R. K. HALLAN (gr. Mr. F. E. Buncombe), Cross Oak, Berkhamsted, showed the best pair of bunches of Black Hamburgh; these had fine berries, but many of the top ones had the bloom rubbed off; second, Capt. DRUMMOND; third, Sir W. LAWRENCE. G. MAYER, Esq., was the only exhibitor of Mrs. Pince, and was awarded the chief award for two heavy bunches. Alicante was shown by five competitors, the winning pair of bunches coming from Capt. R. B. BRASSEY (gr. Mr. J. J. Quinn), Cottesbrooke Hall, Northampton, and they were excellent; second, Sir CHARLES NALL-CAIN; third, G. MAYER, Esq.

The best pair of bunches of Madresfield Court came from Capt. R. B. BRASSEY, and were capitally coloured; second, Sir W. LAWRENCE; third, G. MAYER, Esq. Two handsome clusters, heavy, large berried, and well-coloured won first prize for G. MAYER, Esq., in the class for Prince of Wales; second, Sir B. GREENWELL (gr. Mr. W. Lintott), Marden Park, Caterham.

In the "any other black" class, the premier award was won by Sir B. GREENWELL with neat, closely-berried bunches of Lady Downe's Seedling; second, Sir CHARLES NALL-CAIN, with Appley Towers; third, G. MAYER, Esq., with Lady Downe's Seedling.

Muscat of Alexandria was not very well shown; the best two bunches of this variety came from LADY DENNING LAWRENCE (gr. Mr. J. Rutherford), King's Ride, Ascot, and these were capitally coloured, shapely bunches of good size; second, Sir W. LAWRENCE; third, G. MAYER, Esq.; six entries.

In the "any other white" class, Sir Wm. LAWRENCE led with small, nicely-coloured bunches of Chasselas Napoleon; second, Capt. DRUMMOND, with Foster's Seedling; third, A. P. BRANDT, Esq. (gr. Mr. J. W. Barks), Bletchingley Castle, Bletchingley, with Golden Queen.

COLLECTION OF HARDY FRUITS.

Four competitors came forward in the class for a collection of thirty dishes of hardy fruits arranged on a space not exceeding twelve feet by three feet. The premier collection, shown by Major F. J. D. WINGFIELD DIGBY (gr. Mr. E. Hill), Sherborne Castle, Dorset, consisted of fine, clean specimens of The Queen, Royal Jubilee, James Grieve, Peasgood's Nonsuch, Ribston Pippin, Rev. W. Wilks, Allington Pippin, Mère de Ménage, Gloria Mundi, Cox's Orange Pippin, and Bramley's Seedling Apples; Beurré Diel, Conference, Pitmaston Duchess, Doyenné du Comice, Marie Louise, Beurré Alexander Lucas, Durondeau and Bickling Pears; Golden Eagle, Gladstone, Prince of Wales and Sea Eagle Peaches; Coe's Golden Drop, Monarch, President, Primate and Late Orange Plums; and Brown Turkey Figs. Second prize fell to Capt. DRUMMOND, who had some very heavy culinary Apples and a fine dish of President Plum; third, Sir CHARLES NALL-CAIN.

Eleven classes were open to amateurs and gardeners for Apples, Pears, Plums Damsons or Bullaces, Morello Cherries, Raspberries, and Figs.

The principal class was for twenty-four dishes of Apples distinct, to include sixteen cooking and eight dessert varieties. Eight competed, and some very fine fruits were staged. The first prize was awarded to Mr. G. CARPENTER gardener to F. C. Stoop, Esq., West Hall, Byfleet whose fruits were of very large size, beautifully coloured, clear of skin and excellent in every other respect. Notable culinary varieties were Cox's Pomona, Victory, Annie Elizabeth, Tyler's Kernel, Arthur Turner, and Warner's King whilst of dessert varieties he had Rival, Cox's Orange Pippin, James Grieve George Carpenter, Ellison's Orange and Ribston Pippin; second Capt. M. DRUMMOND, Cadland Park, Southampton (gr. Mr. L. Smith) whose excellent exhibit included splendid fruits of Sir John Thornycroft and Chas. Ross, his dessert varieties being his best fruits; third Sir

SIR CHAS. NALL-CAIN (gr. Mr. T. E. Pateman), Brockton Hall Hatfield.

In the class for twelve dishes of Apples distinct, to include eight cooking and four dessert varieties there were five exhibits, in which C. HOLMES, Esq., The Node, Welwyn (gr. Mr. J. Goldsmith) excelled. His best culinary varieties were The Queen, Royal Jubilee Lane's Prince Albert, Lady Henniker, Rev. W. Wilks, and Tyler's Kernel, while of the dessert varieties he showed splendid specimens of Ribston Pippin, Wealthy, Cox's Orange Pippin, and Rival; second, VISCOUNT HAMBLEDON, Greenlands, Henley-on-Thames (gr. Mr. W. Turnham), whose fruits of Peasgood's Nonesuch, Rev. W. Wilks, Cox's Orange Pippin, Bismarck and James Grieve were very fine; third, Sir W. LAWRENCE, Bt., Burford Lodge, Dorking.

For six dishes of cooking Apples J. A. STIDSTON Esq., Geignmouth, was first with good examples of Emperor Alexander, Chas. Eyre, Baron Wolseley Lord Derby, Peasgood's Nonesuch and Warner's King; second, Sir E. PARSON, Brickendenbury (gr. Mr. W. Stephenson), who showed small, but very clean, and finely-coloured fruits, of which Bismarck, Cox's Pomona and Lady Henniker were exceptionally good; third, Sir JEREMIAH COLMAN, Bt., Gatton Park, Reigate (gr. Mr. J. Collier).

For six dishes of dessert Apples, J. H. LOUDON, Esq., Wye Kent (gr. Mr. J. Bond), excelled with St. Edmund's Russet, Ribston Pippin, Rival, American Mother, Cox's Orange Pippin, and Allington Pippin; second, Sir E. PEARSON, whose best fruits were Mabbot's Pearmain, The Houblon and Wealthy; third, J. A. STIDSTON, Esq.

Owing to the exceptional scarcity of Pears only two competed in the class for nine dishes of Pears, distinct, in which Capt. DRUMMOND was first, and Sir CHARLES NALL-CAIN second. Capt. DRUMMOND had Fondante d'Automne, Chaumontel, Beurré Diel, Conference, Pitmaston Duchess, Beurré Hardy, Louise Bonne of Jersey, Durondeau, Doyenné Boussoch, Doyenné du Comice and others.

The best three dishes of Plums was shown by LADY MARY MORRISON, Fonthill House, Tisbury (gr. Mr. H. H. Mills), whose varieties were Coe's Golden Drop, President and River's Late Orange; second, Capt. DRUMMOND; third Sir CHARLES NALL-CAIN.

The best Damsons or Bullaces in three varieties were shown by J. H. LOUDON, Esq., who won with Bradley's King, Frogmore Damson and Langley Black Bullace; second, Capt. DRUMMOND.

Much the finest Morello Cherries were shown by LADY HADDEN, Rosseyway, Berkhamsted (gr. Mr. E. Hayles); second, VISCOUNT HAMBLEDON.

The class for one dish of fifty fruits of autumn-fruited Raspberries resulted in Capt. DRUMMOND winning premier honours with the variety Queen Alexandra, and LADY HADDEN was placed second with Lloyd George variety. The best Figs, grown out-of-doors, were shown by Capt. DRUMMOND, who exhibited the variety Negro Largo.

COLLECTIONS BY NURSERYMEN.

Two classes were open to nurserymen for collections of hardy fruits, the one for an exhibit arranged on a space of thirty feet by six feet, the other occupying an area of twenty feet by six feet.

Two excellent exhibits were staged in each class. In the more important one Mr. J. C. ALLGROVE and Messrs. GEORGE BUNYARD AND Co., were the exhibitors. The former showed 126 distinct varieties, principally of Apples; there were also a few Pears, Bullaces and Quinces. The exhibit was very tastefully decorated with Rose hips and baskets of Berberis vulgaris sprays in fruit, the last elevated on stands above the fruits. The Apples were all choice samples of such sorts as Mr. S. T. Wright, Lane's Prince Albert, Rev. W. Wilks, James Grieve, Washington, Passon de France, Ball's Pippin, Charles Ross, and American Mother; whilst of Pears we noticed excellent fruits of Beurré Clairgeau, Doyenné du Comice, Fertility and Beurré Hardy (Gold Medal).

MESSRS. G. BUNYARD AND Co. arranged their fruits in ornamental baskets, of which the majority were elevated on stands, with a central pyramid of Apples crowned with hanging baskets containing the richly-coloured Lady Sudeley Apple and other hanging baskets were filled with the brilliantly-coloured Ben's Red. Notable Apples in this collection were Egremont Russet, Striped Beefing, Hormead's Pearmain, St. Edmund's Pippin, Rev. W. Wilks, and Fearn's Pippin; whilst of Pears there were fine specimens of Doyenné du Comice, Conference and Beurré Superfin. The group was decorated with Ferns, Crabs and Nuts. (Gold Medal and congratulations).

In the smaller class Messrs. LAXTON BROS. and Messrs. J. CHEAL AND SONS, LTD., were the exhibitors and won in this order. The former arranged a pretty display in white baskets on a black ground, decorated with sprays of coloured foliage, with Codiaeums and Palms as foils. Their fruits were all splendid examples of such Apples as Cox's Pomona, Lord Lambourne, James Grieve, The Houblon, Newton Wonder, Gascoyne's Scarlet Seedling, Rev. W. Wilks and Laxton's Superb, and Pears, Beurré Superfin, Doyenné Boussoch and Doyenné du Comice. Messrs. J. CHEAL AND SONS, LTD., also employed white baskets to display their fruits but on a white ground. They had clean, choice samples of Apples—Ellison's Orange, Guelph, Chelmsford Wonder, Bramley's Seedling, Stirling Castle, Lord Derby, Annie, Elizabeth and a few sorts of Pears.

APPLES SHOWN IN BOXES BY MARKET GROWER.

Two exhibits were forthcoming in this class and they were both exceptionally good. Lt.-Col. H. LUMLEY WEBB, Upchurch, Kent, had the largest fruits, and he arranged them in cross pack. The varieties were Blenheim Pippin, Lord Derby, Bramley's Seedling, Lane's Prince Albert, Newton Wonder, Tower of Glamis, King of the Pippins, Allington Pippin, Ben's Red, Cox's Orange Pippin, Paroquet and American Mother.

The other exhibit by the HOLLESBY BAY LABOUR COLONY, Woodbridge, Suffolk, showed nicely graded fruits of excellent quality, and arranged in straight pack. They comprised the varieties Dr. Harvey, Bismarck, Bramley's Seedling, Gascoyne's Scarlet Seedling, Blenheim Pippin, Worcester Pearmain, Cox's Orange Pippin, Allington Pippin, Newton Wonder, Mere de Ménage, and Lord Derby.

THE DISTRICT COUNTY CLASSES.

As is usual at the fruit show, competition was very irregular in the various classes provided for growers residing in the specified district areas. Kent, which many consider the orchard of England, and has a class to itself, was poorly represented, especially with Pears, while the best competition was found in the class for growers in Gloucester, Oxford, Bucks., Berks., Beds., Herts., and Middlesex. The classes for Worcester, Hereford, Monmouth and Wales; for the six northern counties of England and the Isle of Man; for Scotland and for the Channel Islands, were empty, while Ireland was represented by the customary excellent Apples and Pears from the EARL OF BESSBOROUGH'S gardens.

For each county district there is a class for Apples which requires two dishes of dessert and four dishes of culinary varieties, and a class for six dishes of Pears, distinct varieties.

In the Kent class, J. H. LOUDON, Esq. (gr. Mr. J. Bond), Olantighe, Wye, won both first prizes with excellent fruits. His chief Apples were Charles Ross, James Grieve, Lord Derby and Bramley's Seedling, while his Pears included Conference, Beurré Superfin and Beurré Alexander Lucas. There was no other exhibit of Pears, while Canon J. R. LEIGH (gr. Mr. S. Johnson), Yalding Vicarage, was second with Apples.

In the Surrey, Sussex and Hants. class, W. H. MYERS, Esq. (gr. Mr. H. Ellwood), Swanmore Park, Hants., was first with Apples, showing Coronation, Cox's Orange, The Queen and Peasgood's Nonesuch of brilliant colour. EARL BEATTY (gr. Mr. A. Barrett), Reigate Priory, Surrey, was second.

LADY MARY MORRISON (gr. Mr. H. Mills),

Fonthill House, Tisbury, who showed good dishes of Ribston Pippin, Cox's Orange Pippin, Mere de Ménage and Lane's Prince Albert, was first with Apples in the Wilts, Dorset, Somerset, Devon and Cornwall class, and J. H. VIRGO, Esq., Parsonage Heys, Walton-in-Gordano, was second. The best Pears were shown by J. A. STIDSTON, Esq., Bishopsteignton, Teignmouth, who staged excellent dishes of Doyenné du Comice and Beurré Boussoch, and LADY MARY MORRISON, was second.

Entries were very numerous in the Apple class in the Gloucester, Oxford, Bucks., Berks., Beds., Herts., and Middlesex section, where Capt. N. G. CHALMERS HUNT (gr. Mr. W. J. Wright), Gamals Hall, Hertford, was first. He staged very highly-coloured dishes of Cox's Orange Pippin, Charles Ross, Peasgood's Nonesuch, and Bismarck. E. G. HODY, Esq., Buntingford, was second, Mrs. AUSTIN (gr. Mr. V. G. Longhurst), Ellern Mere, Totteridge, had the best of three exhibitors of Pears, and her very good dishes included Beurré Diel, Beurré Superfin and Beurré Boussoch. Mr. R. STAWARD, Ware Park Gardens, was second.

Only E. H. SIKES, Esq., Fryerning Grange, Ingatstone, exhibited in the division for growers in Essex, Suffolk, Norfolk, Cambridge, Hunts., and Rutland. His Apples, both dessert and culinary varieties, were very highly-coloured. His chief varieties were Cox's Orange Pippin, Allington Pippin, Charles Ross and Emperor Alexander.

Capt. R. B. BRASSEY (gr. Mr. J. G. Quinn), Cottesbrooke Park, Northants, had the best Apples and Pears in the Lincoln, Northampton, Warwick, Leicester, Notts., Derby, Staffs., Shropshire and Cheshire division. His Apples were excellent specimens of Ribston Pippin, Cox's Orange Pippin, Bramley's Seedling and Peasgood's Nonesuch, while the Pears included Doyenné du Comice, Comte de Lamy, and Louise Bonné of Jersey. C. R. DUNKLEY, Esq., Moorfields, Warkton, Kettering, was second with Pears.

In the Irish class the EARL OF BESSBOROUGH (gr. Mr. T. E. Tomalin), Piltown, Co. Kilkenny, included particularly good dishes of Cox's Orange Pippin, Ribston Pippin, The Queen, and Peasgood's Nonesuch in his first prize exhibit of Apples, while his Pears included equally good examples of St. Luke and Gansel's Bergamot. There was no other exhibitor of Pears, while T. SHERRARD, Esq. (gr. Mr. Synnott), Meyborough, Douglas, Cork, was second with Apples.

SINGLE DISH CLASSES.

Generally, the competition was very strong in the classes for single dishes of specified varieties of Apples and of Pears, and while in the majority of instances the Apples were not quite so brilliantly coloured as in some former years there were some notable exceptions, and all the prize-winning dishes were of very shapely and characteristic fruits. There were thirty-one dishes of Cox's Orange, twenty-two of Blenheim Orange, twenty-one of Ribston Pippin, and seventeen of Allington Pippin.

In the classes for dessert Apples, J. A. STIDSTON Esq., won first prizes for Ellison's Orange, Gascoyne's Scarlet, King's Acre Pippin and Claygate Pearmain. CANON LEIGH was first with American Mother. LADY MARY MORRISON had the best dish of Adams's Pearmain, and A. R. CARLISLE, Esq., The Maltings, Biggleswade, was first with Allington Pippin. Mrs. AUSTIN showed the best Blenheim Pippin and Sturmer Pippin. R. B. HOARE, Esq. (gr. Mr. H. Penfold), Greenhill, Warminster, had the best Charles Ross, and J. H. VIRGO, Esq., was the best of the exhibitors of excellent dishes of Cox's Orange Pippin.

The best Egremont Russet and James Grieve were shown by J. H. LOUDON, Esq. Capt. H. DRUMMOND (gr. Mr. L. Smith), Cadland Park, Southampton, excelled with Orleans Reinette, and Mr. G. CARPENTER, West Hall Gardens, Byfleet, was first with Laxton's Superb and St. Everard. Sir EDWARD PEARSON (gr. Mr. W. Stephenson), Brickendenbury, Hertford, won the first prize for Margil and Rival, and VISCOUNT HAMBLEDON (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, was first with Ribston Pippin.

The class for any variety not named above induced interesting competition, and the first prize was won by J. CAIRD, Esq. (gr. Mr. F. Moor), Ockroydon, Wimbledon Park, with a dish of King Harry, while T. SHERRARD, Esq., was second with brilliant fruits of Worcester Pearmain. Belle de Boskoop of high quality and shown by W. H. MYERS, Esq., was the best dish of any late dessert variety, and Lord Burghley, shown by Sir CHARLES NALL-CAIN, won the second prize.

In the classes for culinary Apples Sir CHARLES NALL-CAIN won first prizes for Crawley Beauty, Encore and Golden Noble. Sir EDWARD PEARSON was first with Bramley's Seedling and Rev. W. Wilks, of immense size. Viscount HAMBLEDON led for dishes of Annie Elizabeth and Newton Wonder. Mr. R. STAWARD excelled with Bismarck of high colour, and CANON LEIGH was first with Blenheim Pippin. The first prize Dumelow's Seedling were shown by Capt. H. B. TATE (gr. Mr. A. Moss), Billesby Manor, Alcester. Capt. R. B. BRASSEY was first with Ecklinville, Capt. C. HUNT was first with Edward VII., and W. H. MYERS, Esq., won the first prize for Golden Spire, Norfolk Beauty and The Queen of high quality. The EARL OF BESSBOROUGH had handsome fruits of Grenadier, while E. H. SIKES, Esq., was first with Lord Derby and Warner's King. Viscount HAMBLEDON won the first prize for Newton Wonder, and J. N. STUART, Esq., Bromhill, Harrow, was successful with Stirling Castle, and J. A. STIDSTON, Esq., was first with S. T. Wright.

Very many dishes were shown in the class for eight fruits of any variety not named above, and the best was of Loddington, shown by the EARL OF BESSBOROUGH, and Mère de Ménéage, shown by Mr. R. STAWARD, was second.

DESSERT PEARS.

All the dishes of dessert Pears were staged in the Orchid annex, and these were of excellent appearance. E. H. SIKES, Esq., was first with Beurré Anjou, Beurré Hardy, and, being the only exhibitor, was second with Winter Nelis.

Capt. TATE won the first prize with Beurré Bosc and Mr. G. CARPENTER was equally successful with Beurré Superfin, Fondante d'Automne, and was awarded the second prize for the only dish of Thompson's. LADY MARY MORRISON had the best Conference and Emile d'Heyst, and J. A. STIDSTON, Esq., was first with Durondeau.

Of the many good dishes of Doyenné du Comice and Louise Bonne of Jersey, the best were shown by the Rev. R. SMITH (gr. Mr. H. Bates), Hertingfordbury. Capt. R. B. BRASSEY was first with Marie Louise, and J. H. LOUDON, Esq., had the best Pitmaston Duchess.

The best eight fruits of any early variety not named above were of Beurré Boussoch, shown by Mrs. AUSTIN, while Parrot, staged by Hon. Mrs. GLYN (gr. Mr. T. Bradbury), Albury Hall, Hadham, Herts., was second. The variety Charles Ernest, shown by E. H. SIKES, Esq., proved to be the best dish of a late variety not scheduled, and Beurré Alexander Lucas, staged by Mr. R. STAWARD, was second.

Many dishes were staged in a class for the best flavoured Apples not named in the schedule, and the first prize was awarded to J. A. STIDSTON Esq., for a dish of St. Edmund's Pippin, while the Rev. F. J. WINGFIELD DIGBY (gr. Mr. E. Hill), Sherborne Castle, was second with Mr. Phillimore. There were only three dishes in the similar class for Pears where the first prize was awarded to A. P. BRANDT, Esq. (gr. Mr. J. W. Barks), Bletchingley Castle, for Comte de Lamy.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

The monthly meeting of this Society was held in the R.H.S. Hall, on Monday, September 14, Mr. Chas H. Curtis presiding. Five new members were elected. Two members withdrew interest amounting to £9 5s. 4d.; two members over the age of seventy years withdrew £129 2s. 9d. from their deposit accounts;

and one lapsed member was paid the sum of £49 0s. 9d. The death certificate of one deceased member was produced and the sum of £54 1s. 5d. was passed for payment to his nominee; the sum of £5 was granted to one member in distress, and a grant of 5s. per week for life to one member of over seventy years. Grants were made to six members for dental and optical treatment, amounting to £22 17s. 3d., while eight other cases were considered. The sick pay on the ordinary side for the month came to £56 19s. 10d., and on the State side to £81 12s. 0d.; Maternity benefits totalled £5.

NATIONAL CHRYSANTHEMUM.

THE Floral Committee met in the Music Gallery at Holland Park Hall, W., on September 21, and the following awards were made.

FIRST-CLASS CERTIFICATES.

Cranford.—(2.1.c) An early-flowering yellow variety of considerable grace. Shown by Mr. W. ROOTS, Hollicot, Cranford.

Berengaria.—(2.1.b). A showy and graceful variety, carrying its flowers on good stems. The colour is deep rose.

Shirley Pride.—(2.1.b). A graceful free-flowering variety of rich rosy-mauve colour.

Chancellor.—This charming variety has firm and finely-formed flowers of pleasing golden fawn colour. The foregoing three varieties were shown by Mr. H. WOOLMAN, Shirley, Birmingham.

Mayford White.—A pure white variety of very beautiful form, the florets reflexing a little. Stems slender but firm. Shown by Mr. H. SHOESMITH, JUNR., Mayford, Woking.

Phoenix.—The flowers of this free-flowering variety are very light and graceful, and they are of a bright, clear chestnut colour. Shown by Messrs. SCOTT AND WICKHAM, Witely.

Crimson Circle.—This first-rate variety carries solid and yet graceful flowers of a fine deep and rich crimson hue.

Lichfield Peach.—A graceful variety with somewhat twisted florets and distinct "Japanese" style. The colour is pearly-pink with a Peach centre.

Pink Dame.—In this elegant variety the deep pink flowers are of good size and borne on stiff stems.

Fire Crest.—A showy, long-stemmed, useful variety of light chestnut-red colour, with old gold reverse. The foregoing four sorts were shown by Mr. A. W. THORPE, Lichfield, Staffs.

COMMENDATION.

Peter Pan.—A neat early-flowering sort, almost of Pompon form. The colour is soft cardinal red. Shown by Mr. H. WOOLMAN.

Obituary.

M. Jules Vacherot.—It is with great regret that we learn from the French press of the death of M. Jules Vacherot, the well-known French landscape gardener and writer on horticultural subjects, at the age of sixty-three. As the creator of the beautiful palace gardens at Laeken, Brussels, and of the grounds in the French sections of the universal exhibitions of St. Louis and Brussels, he had attained a fame far beyond his own country, and his monumental work "*Parcs et Jardins Modernes*, published in 1908, is known as the landscape gardener's vademecum. The son of a gardener, he early entered the gardening profession, and eventually became head gardener to the City of Paris. In 1900 he directed the horticultural side of the Great Exhibition, his creations exciting the utmost admiration. Like most busy men, he found time for other activities besides his official duties, and was several times Vice-President of the Société Nationale d'Horticulture de France, besides occupying himself prominently in charitable and municipal affairs. His uniform kindness made him a general favourite, and the immense number of friends who followed him to his last resting place testified to his great qualities of heart and mind.

ANSWERS TO CORRESPONDENTS.

CORRECTION.—In Mr. Heaton's notes on Market Industry in the Worthing District (p. 233), a clerical error appears, and his reference to Cherrington Manor should be to Sherrington Manor, near Berwick Station, Sussex.

ANNUAL LARKSPUR. F. M. K. The Annual Larkspur resents transplanting. The seeds should be sown thinly on well-prepared ground during March or April, where the plants are intended to flower, and thinned out as growth advances, to a foot or more apart. When preparing the ground dig in well-decayed manure and add a little lime rubble before sowing the seeds.

CINERARIA DISEASED. C. I. S. The disease on the Cineraria is the rather uncommon rust, *Coleosporium Senecionis*. The uredospores agree in dimensions with those given by Grove, though they are not "mostly oblong," as stated, but are mostly spherical. Chittenden (*Journal of the Royal Horticultural Society*, XXXIII, p. 511, 1908) recommends spraying with a solution of potassium permanganate.

GLASSINESS IN APPLES. E.W.S. The fruit you send is affected with glassiness, which is a purely physiological effect brought about by water penetrating the intercellular spaces instead of air. You will find an interesting letter on "Glassiness in Apples" by Mr. W. H. Divers, in *Gard. Chron.*, December 2, 1922, p. 327.

NAMES OF PLANTS. L.C. 1, *Cotoneaster horizontalis*; 2, probably *Spiraea Aitchisonii*; 3, probably *S. Menziesii*; 4, *Calycanthus floridus*; 5, *Staphylea pinnata*; 6, *Hibiscus syriacus*; 7, *Ligustrum coriaceum*. W.S. 1, too withered to identify; 3, *Berberis vulgaris* var.; 5, *Rhus venenata*; 7, *Physocarpia virginiana*; 9, *Leycesteria formosa*. We do not undertake to name varieties of Roses. G.E.T. 1, *Ulmus montana*; 2, *Cedrus Libani*; 3, *Thuya plicata*; 4 and 6, *Pseudotsuga Douglasii*; 5, *Cedrus Deodara*; 7, *Picea excelsa* var.; 8, *Sequoia gigantea*; E.S. 1, *Euonymus japonicus* var. *latifolius*; 2, *Spiraea variegata*; 3, *Euonymus radicans*; 4, not recognised; 5, *Crinum Powellii*; 6, *Lythrum Salicaria*; 7, not recognised; 8, *Tradescantia virginiana rubra*; 9, *Funkia lanceifolia albo marginata*; 10, *Olearia Haastii*; 11, *Romneya Coulteri*; 12, *Alstromeria*, probably *A. aurantiaca*; 13, *Ceratostigma plumbaginoides*; 14, too small for identification; 15, *Polygonum affine*; 16, *Helianthus giganteus*; 17, not recognised; 18, *Helenium Bigelovii*; 19, *H. autumnale*, striatum. C.S. A variety of *Hibiscus syriacus*. H.E.P. *Haemanthus* species, probably *H. coccineus*. A.B. 1, *Inula Helenium*; 2, *Veratrum nigrum*. P.S. 1, *Jasione montana*; 2, *Galium verum*; 3, *Commelina coelestis*. J.S. *Arundinaria gracilis* (syn. *Bambusa gracilis*). The plant is increased by division either in the spring or autumn. The *Begonia* leaves are probably infested with rust.

SEEDLING CARNATIONS. *Constant Reader*. The seedling Carnations appear to have some merit, but it is just possible there are others equal or superior to them already in cultivation. In any case, we advise you to grow the plants on and next year submit flowers to the Floral Committee of the Royal Horticultural Society, or you might send them to some firm which makes a speciality of these flowers.

TOMATO. T.C. No disease due to either fungi or insects was present on the leaves sent. The appearance suggests ill health owing to some cultural defect.

Communications Received.—A. B.—M. B. C.—E. D. D.—N. W.—P. G.—B. S. G.—E. T.—E. R. B.—A. MCS.—J. B.—A. M.—J. B.—F. B. D.

MARKETS.

COVENT GARDEN, Tuesday, September 29th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.
(All 48's except where otherwise stated).

s. d. s. d.	s. d. s. d.
Adiantum cuneatum ... 10 0-13 0	Erica gracilis, 48's per doz. ... 27 0-30 0
—elegans ... 10 0-12 0	—nivalis, 48's per doz. ... 27 0-36 0
Aralia Sieboldii ... 9 0-10 0	Above varieties in 60's, per doz. 12 0-15 0
Araucarias, per doz. ... 30 0-42 0	—in Thumbs, per doz. ... 9 0-10 0
Asparagus plu- mosus ... 12 0-18 0	Marguerites, 48's per doz. ... 15 0-18 0
—Sprengeri ... 12 0-18 0	Nephrolepis in variety ... 12 0-18 0
Aspidistra, green 36 0-60 0	—32's ... 24 0-36 0
Asplenium, per doz. ... 12 0-18 0	Palms, Kentia ... 30 0-48 0
—32's ... 24 0-30 0	—60's ... 15 0-18 0
—nidus ... 12 0-15 0	Pteris, in variety 10 0-15 0
Cacti, per tray, —12's, 15's ... 5 0-7 0	—large 60's ... 5 0-4 0
Chrysanthemums, pot grown, in variety, 48's per doz. ... 18 0-24 0	—small ... 4 0-5 0
Crotons, per doz. 30 0-45 0	—72's per tray of 15's ... 2 6-3 0
Cyrtomium ... 10 0-25 0	Solanums, 48's per doz. ... 12 0-15 0
	—Viscarias, 48's per doz. ... 15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices

s. d. s. d.	s. d. s. d.
Adiantum deco- rum, doz. bun. 9 0-10 0	Gladioli, primulinus, per doz. spikes 1 6-2 6
—cuneatum, per doz. bun. ... 6 0-8 0	—scarlet, per doz. spikes ... 3 0-4 0
Arums (Richardias), per doz. ... 6 0-8 0	—Giant White, per doz. spikes 2 0-3 0
Asparagus plu- mosus, per bun. long trails, 6's 2 0-3 0	Heather, white, per doz. bun. 10 0-12 0
med. sprays ... 1 6-2 6	—pink, per doz. bun. ... 8 0-9 0
short ... 0 9-1 3	Honesty, per doz. bun. ... 18 0-30 0
—Sprengeri, per bun. long sprays ... 1 6-2 0	Lapagerias, per doz. blooms ... 3 6-4 0
med. " ... 1 0-1 6	Lilium longiflorum long, per doz. ... 4 0-4 6
short " ... 0 4-1 0	—speciosum album, long, per doz. ... 3 6-4 0
Aster Amellus King George, ... 6 0-9 0	—short, per doz. 4 0-5 0
Asters, white, per doz. bun. ... 6 0-8 0	—speciosum rubrum, long, per doz. blooms 2 0-2 6
—coloured, per doz. bun. ... 5 0-7 0	—short 1 6-2 0
Bouvardia, white, per doz. bun. 12 0 15 0	Lily-of-the-Valley, per doz. bun. 24 0-36 0
Camellias, white, per box, 12's ... 3 0-3 6	Orchids, per doz. —Cattleyas ... 36 0-48 0
Carnations, per doz. blooms ... 2 6-4 0	—Cypripediums 5 0-7 0
Chrysanthemums —white, per doz. blooms ... 4 0-6 0	Physalis, per doz. bun. ... 15 0-24 0
—white, large blooms, per doz. 6 0-8 0	Roses, per doz. blooms, Rich- mond ... 2 6-3 6
—bronze, per doz. blooms ... 2 0-4 0	—Liberty ... 2 6-3 6
—bronze, large blooms, per doz. 3 6-4 0	—Madame Butter- fly ... 1 6-3 6
—bronze, per doz. bun. ... 12 0-18 0	—M me. " Abel Chatenay ... 2 0-2 6
—yellow, per doz. blooms ... 4 0-6 0	—Melody ... 2 6-3 6
—yellow, per doz. bun. ... 12 0-15 0	—Molly Sharman Crawford ... 2 6-3 6
—yellow, large blooms, per doz. 6 0 7 0	—Ophelia ... 2 6-3 6
—pink, large blooms, per doz. 4 0 5 0	—Sunburst ... 2 6-3 6
Above colours— —medium, large blooms, per doz. 2 0-3 0	Scabiosa caucas- ica, per doz. bun. ... 6 0-7 0
—spray, in bunches, per doz. ... 12 0 18 0	Smilax, per doz. trails ... 3 0-3 6
Coreopsis, per doz. bun. ... 1 3-1 6	Statice, mauve ... 6 0-8 0
Cornflowers per doz. bun. ... 2 6-3 0	—white, per doz. bun. ... 6 0-8 0
Croton leaves per doz. ... 0 0-2 6	Stephanotis, per 72 pipe ... 4 0-5 0
Fern, French, per doz. bun. ... —	Stock, English white ... 6 0-8 0
Gardenias, per box, 12's, 18's ... 5 0-6 0	Sultan, white, per doz. bun. ... 4 0-5 0
	—mauve, per doz. bun. ... 4 0-5 0
	Violets ... 3 0-5 0

REMARKS.—In this department business improved towards the end of last week. Carnations show a little improvement in quality and prices are generally firmer. Roses are also realising better prices. Lilium longiflorum is in sufficient supply to meet requirements, and so also is L. speciosum rubrum, while white L. speciosum remains more limited in quantity. Arums (Richardias) are attracting more attention but prices remain firm. There is a ready demand for Chrysanthemums, especially for the best quality amongst the disbudded blooms, notably the white and yellow sorts. Medium-sized blooms are more numerous. Amongst spray stuff white appears to be selling more freely, especially Rio des Blancs and September White. Coloured sorts are, bronze, Mrs. J. Pearson and Verona; pink, Betty Spark; yellow, Horace Martin. There are also numerous other sorts not named for market. The principal sorts of disbudded blooms are white, Duchess, Debutante, Sanctity; pink, Consul and Pink Delight; yellow, Mercedes and Yellow King; bronze,

Amirante, Alcalle and September Bronze; also other sorts not named, including one or two red varieties. A few exhibition blooms are also on sale in excellent condition. Gladioli begin to show signs of finishing, scarlet being in best quality. Small consignments of coloured Pyrethrums are arriving in excellent condition. Violets have much improved in quality and supplies are increasing. The newest arrivals in this department are white Camellias and white Bouvardia, the latter taking the place of Stephanotis, which is now finishing. Gardenias and Lily-of-the-Valley remain fairly plentiful and other subjects show little change from last week.

Fruit: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Apples, English, per 1 sieve— —Cox's ... 6 0-10 0	Lemons, Messina, per box ... 12 0-18 0
—James Grieve ... 2 6-5 0	—Murelia ... 12 0-16 0
—Ribston Pippin 3 0-6 0	—Naples ... 26 0-30 0
—Worcesters Pear- main ... 2 6-6 0	Melons (Forced) —basket ... 10 0-16 0
Apples, Cooking— —large ... 3 6-4 0	—Cantaloupes ... 3 0-8 0
—others ... 2 0-2 6	—Valencia, per case ... 14 0-15 0
Apples, American— —Jonathan, per case ... 8 0 12 0	Nectarines, per doz. ... 6 0-18 0
—Cox's, per case 16 0-20 0	—South African, per case ... 20 0 25 0
—Harral ... 16 0 25 0	Oranges, South African— —Naatges per tray 3 6-5 0
Bananas ... 14 0-22 6	—Naval ... 15 0-20 0
Blackberries— —cultivated, per lb. 0 6-8 0	—Seedless ... 12 0-20 0
—wild, per lb. ... 0 3-0 4	Pines ... 3 0-5 0
Cobnuts, per lb. ... 0 11-1 0	Peaches, English per doz. ... 6 0-18 0
Figs, French, per box ... 1 0-2 0	Pears, per 1 bushel 10 0-15 0
Grapes— —Belgian, Alicante 1 0-1 6	—Fertility, per 1 sieve ... 7 0-8 0
—English ... 1 3-2 0	—Conference ... 8 0-10 0
—Colmar ... 1 9-3 0	—Dr. Jules Guyot, per 1 sieve ... 10 0-14 0
—Hamburg ... 1 3-1 9	Californian— —D'Anjou ... 12 0-14 0
—Muscat ... 2 6-4 6	—Nelis ... 12 0-14 0
—Canon Hall ... 2 6-5 0	—Conice ... 14 0-18 0
—Guernsey ... 0 9-1 3	—Keiffer, per case 14 0-16 0
—Lisbon White ... 10 0-14 0	Plums, English —Monarch ... 16 0-20 0
—Lisbon Black ... 12 0-15 0	Walnuts, per lb. 0 10-1 0
Grape Fruit, —Cuban ... 45 0-47 6	
—South African, per case ... — 35 0	

Vegetables: Average Wholesale Prices.

s. d. s. d.	s. d. s. d.
Beans— —Scarlet Runner, bushel ... 5 0-7 0	Marrows, tally ... 7 6-10 0
Beets, new, per doz. bun. ... 2 0-3 0	Onions— —Dutch ... 7 6-8 0
Cabbage, per tally 7 6-12 6	—English, per cwt. 8 0-9 0
Celery, per doz. fans ... 16 0-24 0	—Valencia ... 8 0-10 0
Cauliflowers, per doz. ... 3 0-6 0	Paranips, per cwt. 6 0-7 0
Carrots, new, per bag ... 6 0-7 0	Potatoes— —King Edward, per cwt. ... 6 0-7 6
Cucumbers, per doz. 3 0-4 0	—others ... 4 0-5 6
—Flats, 36's, 42's 7 6-9 6	Sprouts, per 1 bag 6 0-8 0
Dutch Onions ... 8 0-9 0	Tomatos, English, per strike— —pink ... 4 0-5 0
Endive, per doz. — 3 0	—pink & white ... 4 0-5 0
Horseradish, per bundle ... 2 0-3 6	—blue ... 2 6-3 0
Lettuce, Cos, doz. 1 0-2 0	—Guernsey ... 2 6-3 6
—cabbage ... 1 6-2 0	—Jersey ... 2 6-3 6
Mushrooms, cups 3 0-5 0	—Dutch ... 2 6-3 6
—Broilers ... 2 6-3 0	Turnips, per cwt. 7 0-8 0

REMARKS.—The fruit trade has experienced a very quiet period during the past few weeks, but at the time of writing there seems to be some improvement. English Apples are plentiful but are feeling the competition of very large quantities of Apples from America, and prices are ruling low. For the time of year Cox's Orange Pippin is being marketed freely. Some good cooking Apples are being marketed but prices on the whole are unsatisfactory for the growers. Some late Plums have done well and have been negotiated at comparatively high levels. Pears are not plentiful, but what advantage there might have been to growers who had fairly satisfactory crops has been nullified by the Bourre Hardy, Winter Nelis, Bourre D'Anjou, and Doyenne du Comice that are being shipped from California. Choice fruits such as Peaches, Nectarines, Figs, and Melons are creating a steady inquiry. The Tomato trade has fallen away somewhat, and coupled with increasing quantities of outdoor produce from Jersey, are quoted lower. Cucumbers are in fair demand. Supplies of outdoor vegetables are ample for the demand. Mushrooms are rather more plentiful and inclined to be cheaper. The Potato trade is steady.

GLASGOW.

Trading during the past week was disappointing. In view of the annual holiday on Monday, supplies were excessive, more particularly on Thursday and Friday, when they were beyond the purchasing power of the market, and prices made a general movement downwards in consequence. Apples were, perhaps, the weakest spot. Jonathan was offered down to 5/- per case, and from 14/- to 18/- per barrel. Wealthy ranged from 6/- to 12/- per case, and York Imperial fluctuated between 16/- and 20/- per barrel. Pears were also cheap at 22/- to 28/- per case of 46 pounds for Californian Bourre Hardy; Black Bourre Hardy were worth 16/- half-case, and Conference, 14/- a Good Victoria Plums rose to 9d. and 10d. per pound, but inferior qualities only made 2 1/2 to 4/- a lb. At Friday's auction sales Blackberries were very plentiful and were slow to move at 1 1/2 to 1 1/4 per chip. English Alicante Grapes varied from 1 1/3 to 1 1/2 per pound; Gros Colmar, 2/-, and Muscats, 2 1/2 to 4/- a lb. Bronze Melons made anything from 3 1/2 to 5/- per case.

The cut flower market was heavily stocked with spray Chrysanthemums and disbudded blooms were also plentiful. Ordinary stuff, of which a good deal was soft and unsaleable, realised 1d. to 4d. per bunch. Loan's Pink, Loan's Crimson and Nina Blick averaged 5d. to 6d., and Betty Spark, 10d. to 1 1/3, while disbudded Debutante brought 2 1/2 per dozen. September Bronze, 1 1/4 for 6's; and Sanctity, 9d. to 10d. Gladioli were worth 10d. to 1 1/2 for 6's, and Lilium longiflorum eased off to 4 1/2 per dozen. Arrivals of indoor Roses were confined to Madame Butterfly which obtained 3/- per dozen, while outdoor blooms brought 5d. to 6d. Carnations declined to 2/- and 2 1/2; Asters sold at 9d. to 1 1/2 per dozen, Statice 2d. to 3d per bunch, and Asparagus, 1 1/3.

In the vegetable section the falling off in the demand for Tomatos was reflected in the lower prices, Scotch being down to 8d. per pound, English to 7d. and Jersey to 3 1/2d. Broad Beans were purchasable at 3/- per stone, Celery at 2 1/2 per bunch, Cucumbers at 2 1/2 to 6/- per dozen, Cauliflowers at 3/- to 5/-, and Mushrooms at 2/- per pound for cultivated, and 8d. for field grown.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

- 22,483.—Anderson, G.—Reels for garden, etc., hose. September 9.
21,771.—Donaldson, G. S.—Lawn-mowers. August 31.
21,975.—Watson and Sons, H., Ltd.—Cutting cylinders for lawn mowers, etc. September 2.
21,560.—O'Connell, F. J.—Hedge clippers. August 28.
21,543.—Pangbourne, A. E.—Plant support. August 27.

SPECIFICATIONS PUBLISHED LAST MONTH.

- 238,481.—Pease, E. L.—Production of mixed fertilisers.
238,592.—Richardson, F. S.—Means for adding insecticides to water in a spraying device.
238,795.—Cruckshank, A.—Hose couplings.
238,830.—Randell, W. B.—Holders for stakes and the like for horticultural purposes.
238,472.—Etten, W. V. Van.—Wheelbarrows.

ABSTRACT PUBLISHED LAST MONTH.

Fertilisers. Patent No. 236,494.

A tablet fertiliser has been patented in this country by Messrs. Badische Anilin und Soda Fabrik, of Ludwigshafen-on-Rhine, Germany. A water-soluble fertiliser is formed by mixing urea, ammonium phosphate, and potassium nitrate and/or sulphate. In an example given, 215 pounds of potassium nitrate and 190 pounds of di-ammonium phosphate, both well dried are mixed, and seventy pounds of dry urea are added. The fertiliser may be pressed into tablets or cakes of any desired weight.

This list is specially compiled for *The Gardeners' Chronicle* by Messrs. Rayner and Co., Regd.; Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks, and Designs, can be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the Published Specifications and forward on post free for the price of 1s. 6d. each.

CATALOGUES RECEIVED.

- J. CARTER AND CO., Raynes Park, S.W. 29.—Sweet Peas for autumn sowing.
J. E. KNIGHT AND SON, Tettenhall Rosery, Wolverhampton.—Roses.
CLIBBANS LTD., Altrincham.—Roses, Fruits.
GEORGE PYNE, Denver Nurseries, Topsham, Devon.—Fruits.
FELTHAM FIBRE WORKS, Feltham, Middlesex.—Fibre bulb mixture (Wholesale).
STUART LOW CO., Bush Hill Park, Middlesex.—Fruit trees.
GEORGE BUSYARD AND CO., LTD., Maidstone.—Fruit trees.
E. W. KING AND CO., LTD., Coggeshall, Essex.—Sweet Peas.
W. POWER AND CO., 25, King Street, Waterford.—Bulbs.
JOHN WOOD, 4, Fitzroy Street, W. 1.—Designs of rock and water gardens, etc.
J. H. HEATHMAN, Parson's Green, Fulham, S.W. 6.—Ladders.
GRAINGER AND CO., 120, Old Christchurch Road, Bournemouth.—Bulbs.



THE SUN GARDEN, FALINGE PARK, ROCHDALE.

THE

Gardeners' Chronicle

No. 2024.—SATURDAY, OCTOBER 10, 1925.

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SUPPLEMENTARY PLATE.

The Sun Garden, Falings Park.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 49.9.

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 7, 10 a.m. Bar. 30.2. Temp. 60°. Weather, Fine.

showed, indeed, the presence of two fungi on the diseased shoots; and of the two that which is the agent of the die-back disease was determined by infection experiments made with healthy, potted Roses, Goldfinch, and François Guillot. By this method it was found that the disease is due to the fungus *Gnomonia Rubi*, and that the parasite may also attack wild Roses and Brambles. It has, in fact, been found on the Bramble near Keswick, and Mr. Dawson has been able to demonstrate, again by infection experiments, that the fungus which was destroying the Bramble at Keswick is capable of infecting and bringing about the die-back of wild Roses and of cultivated Ramblers. With these results before him the author concludes that the die-back fungus is a natural enemy of the Bramble, and perhaps also of the wild Rose, and that, chance decreeing that Brambles and wild Roses stricken with the disease should grow near the Ramblers, the last-named became infected. The immunity hitherto enjoyed by the Ramblers has been due only to their isolation, and propinquity has served as the bridge to bring the disease to the Ramblers. In view of these facts there is an added reason for keeping down Brambles in the neighbourhood of gardens. These plants are in themselves pests enough, rooting by their heads and spreading from hedgerow to meadow, but if they are to bring with them troubles to Minnehaha and Lady Gay, and all the rest of the Rambler tribe, they must be grubbed with even more ruthlessness. Mr. Dawson has done an excellent piece of work in unravelling the life history of the die-back fungus, and in warning us betimes of the possibility of the disease appearing in our gardens.

The Sun Garden, Falings Park, Rochdale.

Falings Park stands on high ground overlooking the town of Rochdale (which, incidentally, derives its name from the river Roch running through it), and commands an extensive and fine view of the surrounding country of hill and moor. The park is one of the prettiest in Lancashire. The Sun Garden, an elevated plateau enclosed on three sides by a wall of artistic build, is a beautiful and interesting feature of it from early spring until late autumn. Falings Park is about twenty-five acres in extent, and was the gift of Alderman, later Sir Samuel, Turner, since deceased. He gave eighteen acres of it during his Mayoralty to commemorate the coronation of King Edward VII, in 1902, and the remaining five acres on the occasion of the coronation of King George V, 1911. Alderman Turner was a man of conspicuous business ability, and gave liberally and unostentatiously of his time and material wealth to the Borough of Rochdale. Mr. Blagden, the Superintendent of Rochdale's open spaces—covering nearly 120 acres—has been Parks' Superintendent since the opening of Falings Park in August, 1905. He came to Rochdale from Bow Cemetery where he was for twenty-three years. Our supplementary illustration, reproduced from a very fine photograph lent us by Messrs. Dickson and Robinson of Manchester, shows The Sun Garden in its spring time beauty, when the Tulips and other bulbs supplied by this firm were at their best. So far as we are aware, this garden is unique in its design and position.

Temporary Suspension of "La Tribune Horticole."—In consequence of a widespread strike of printing employees which took place in Belgium in July and August, our little Belgian contemporary, *La Tribune Horticole*, has been compelled to suspend publication during August and September. We have just received a copy dated the 25th July, but published at the end of September, giving the reason for the suspension, and announcing that, unlike

most of the Belgian journals, the price will not be increased. It is further announced that issues will be published bearing the dates of each week which has been missed in order that bound volumes may appear complete.

Rose Ladylove.—The name "Ladylove" is sometimes used in connection with the market prices of Roses in Covent Garden, but Messrs. G. Beckwith and Son, Hoddesdon, point out that they are the only growers of the genuine Ladylove Rose, and moreover, they are not putting any blooms of this variety on the market at the moment, and will not do so until 1927. They state that "the Rose Ladylove bears a slight resemblance to Madame Butterfly and Ophelia, and the name Ladylove is sometimes wrongly used for both these varieties." We are aware that the name Ladylove is sometimes used in Covent Garden, and we believe an attempt was made to apply the name Ladylove to Mme. Butterfly when this sport from Ophelia was introduced from America, but who was responsible for this application we are not in a position to state.

Losses from Insect Pests.—In the fifty-fifth Annual Report of the Entomological Society of Ontario, Mr. C. L. Metcalf, of the Department of Entomology, University of Illinois, places the losses to crops, stock, etc., caused by insect pests in the United States of America at the astounding sum of \$1,590,044,500. He estimates that in 1924 hungry insect pests of cereal crops took a toll estimated at nearly \$450,000,000, whilst the loss to vegetable growers amounted to no less than \$60,000,000. He further stated that fruit insects despoiled \$40,000,000 worth of Apples, Peaches, Pears and Citrus fruits. Mr. Metcalf states that it is believed that there are 1,000,000 kinds of insects in the American continent alone, and 400,000 kinds have been scientifically named and described. Insects are one hundred times as numerous as mammals, thirty times as numerous as birds or fishes, nearly one hundred times as numerous as worms or reptiles, and forty times as numerous as protozoa. For each human being there is at least one million insects. Mr. Metcalf states that the subject offers an unlimited field for research, and he gives particulars of some of the mechanical or physical measures used for the control of insects, with types of farm and garden practices for the control of these pests.

Black Currant Tabooed in America.—Because of the part it plays in the dissemination of the Pine blister rust disease, several States in America have declared the cultivated Black Currant a public nuisance, and the United States Department of Agriculture recommends its elimination. The fungus which causes the disease develops spores which germinate on the leaves of cultivated Black Currants and Gooseberries; the European or cultivated Black Currant is more easily affected, and on it the fungus produces a larger number of spores than on any other species. Infection spreads from late June until the foliage dies, hair-like out-growths of the fungus appearing on the undersides of the diseased leaves. These out-growths produce the spores that infect White Pines. It is stated that the White Pines of America constitute the cream of the forest, and the value of the timber crop is \$550,000,000. In some of the north-eastern States the principal income of the land is derived from White Pine, which yields a profit of \$5 to \$10 per acre per year.

Scottish Rose Plebiscite.—With the object of determining what are the most popular Roses for ordinary garden cultivation in Scotland, the *Daily Record* recently arranged a plebiscite and offered prizes to competitors who succeeded in naming the first dozen in the order of merit. The results, which were announced on Saturday last, are very interesting; 703 lists were received from amateur rosarians residing in every county from Ross-shire and Morayshire in the north, to Berwickshire, Kirkcudbright and Wigtonshire in the south; 254 different varieties of Roses were voted upon. Frau Karl Druschki occupied first place with 512 votes, and the other success-

A Die-back Disease of Rambler Roses. MINNEHAHA and Lady Gay are such hardy Ramblers that it comes as a shock to learn that, like ladies of an earlier century, they have taken to fits of megrims, or worse—and at Wisley, too. In that garden, where most things grow so serenely, these Roses, and American Pillar as well, have at all events in one place—by the river bank—begun to show signs of debility. So far the malady from which they are suffering has not been recorded as occurring elsewhere, so that it would seem that Mr. W. Dawson, who has investigated* the "die-back" from which the Ramblers are suffering, has the melancholy satisfaction of presiding at the birth of a new disease. He has made full use of his opportunity, and has worked out very carefully the nature of the disease and its probable provenance. The symptoms of the malady are striking: dead, black shoots, and yellow and falling leaves. On the dead shoots were found the fructifications of a fungus. Laboratory investigation

* *A Die-back of Rambler Roses.* By W. J. Dawson, M.A., *Journal Roy. Hort. Soc.* Vol. L., Part 1, Jan., 1925.

ful sorts which comprise the collection were:—Caroline Testout, 467; Madame Edouard Herriot, 444; General MacArthur, 398; Ophelia, 351; Golden Emblem, 350; Hugh Dickson, 348; Lady Pirrie, 296; Madame Abel Chatenay, 252; Mrs. Henry Morse, 251; Los Angeles, 220; and Betty Uprichard, 196. Isobel was the most popular single Rose and in the semi-double class honours were divided between Red Letter Day and K. of K., only eight votes separating the two. The prizes were divided among five competitors who named eleven of the twelve varieties correctly.

Roses for Pot Culture in Cold Greenhouses.—The following list of Roses is recommended by the National Rose Society for cultivation in pots in cold greenhouses:—Madame Butterfly, Richmond, Caroline Testout, Sunburst, Elsie Beckwith, Lieut. Chauré, Angelus, Mrs. Aaron Ward, Melody, Frau Karl Druschki, Lady Pirrie, Golden Ophelia, Wm. F. Dreer, and Hoosier Beauty.

The Best Bearded Irises.—Remembering the great interest now taken in Bearded Irises, both at home and in America, the following list of the best twenty-five varieties, published by Mr. Robert Wayman, in *The Flower Grower* (New York), will indicate the trend of taste among American growers:—Ambassadeur B. Illerine, Souvenir de Mme. Gaudichau, Shekinah, Troost, Virginia Moore, Dream, Lent A. Williamson, Anna Farr, Mamie, Asia, Parisiana, Alcazar, Seminole, E. H. Jenkins, Susan Bliss, Mother of Pearl, Ricardi Fonce, Sapphire, Valery Mayet, Brandywine, Eglamour, Mme. Durrand, Magnifica and Sweet Lavender. Mr. Wayman considers Kashmir White, Leverrier and Lord of June well worthy of inclusion in a collection of Irises. It would be interesting to compare Mr. Wayman's "best twenty-five" with similar selections for British gardens prepared by Mr. G. Yeld, Mr. W. R. Dykes, Mr. Bliss, Mr. Murrell, Mr. Wallace and Mr. Bunyard.

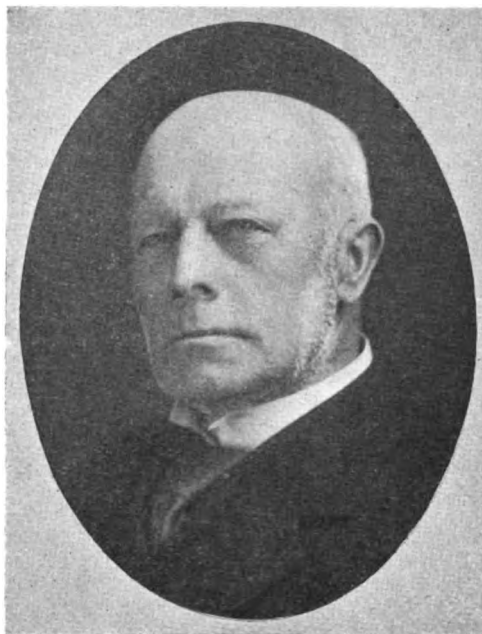
Eat More Watercress.—Mr. S. Monckton Copeman, Emeritus lecturer of hygiene and public health at Westminster Hospital Medical School, in an interesting article on "Watercress and Body Metabolism" in *The Pharmaceutical Journal and Pharmacist* for September 26, refers to the great value of Watercress as a food as well as its potential value as a therapeutic agent. He states that Watercress apparently contains all three of the recognised vitamins, A, B and C, together with salts of potash and iron, in addition to a relatively considerable amount of iodine, the possible importance of which must not be overlooked. With regard to the influence of Watercress on body metabolism, Professor Copeman states that results in certain instances have been most striking, more particularly in respect of improvement of weight and appetite, in the appearance of the skin, and also in regard to amelioration of a condition of chronic constipation.

The New Kelvin Hall.—The sub-committee of the Glasgow Corporation appointed to consider the re-building of Kelvin Hall has recommended the Corporation to accept the tender of Sir William Arrol and Co., to erect a new steel-frame, fire-proof building on the old site. The estimated cost is £162,115, a sum that should be sufficient to erect a hall worthy of the city and adaptable for exhibitions, etc.

Treatment of Newly Planted Roses.—In the booklet entitled *Hints on Planting Roses*, published by the National Rose Society, it is recommended that the shoots of dwarf plants that have been recently planted should be shortened to within six inches of the ground. For standards the prunings should be somewhat closer, and it is recommended to cut the shoots back to within four inches of their union with the stock. Roses planted during the autumn and winter should be pruned in the March and April following, but those planted early in the spring should be pruned at the time of planting. Climbing hybrid Teas should not be pruned the first year after planting, otherwise they are liable to refuse to climb.

Abolition of German Import Licences.—The Board of Trade announce that as from October 1, the requirement of import licences is withdrawn for all commercial goods imported into Germany except those (a small number) of which a list is published in the Board of Trade Journal for October 1.

Mr. William J. Jefferies.—An outstanding personality in the horticultural trade is Mr. W. J. Jefferies, principal of the firm of Messrs. Jno. Jefferies and Son, Ltd., Royal Nurseries, Cirencester. Although born so far back as 1844, Mr. Jefferies continues to enjoy good health although he does not come so often to the London exhibitions as was his wont in bygone years. Highly esteemed by all who know him, for his great ability and integrity, it is perhaps in the councils of the horticultural traders that he won the highest regard and respect, and the high opinion in which he is held by the trade was shown in 1913-14 when he was elected President of the Horticultural Trades' Association.



MR. WILLIAM J. JEFFERIES.

For very many years he has been a member of the Royal Horticultural Society's Fruit and Vegetable Committee, and he is pardonably proud of the fact that he is the oldest member of the Horticultural Club and of the National Rose Society, in both of which he has served on the governing body. Mr. Jefferies was educated at Cirencester Grammar School, and after leaving school became associated with his father in the nursery and seed business. Quite early in his business life he appreciated the value of experience gained elsewhere than in the home nursery, and so he went to Messrs. Fisher, Holmes and Co., Handsworth, Sheffield, where he had a thorough training in the propagation of hardy trees and shrubs and acquired special knowledge of Hollies and Rhododendrons. Returning from Sheffield he joined his father in business, subsequently taking over complete control, and finally converting the seed and nursery business into a private limited liability company, of which he is the principal.

Early Bearing Apples.—Mr. W. T. Macoun, the Canadian horticultural expert, has prepared a table indicating the age at which well-known varieties of Apples come into bearing. Quite rightly, Mr. Macoun points out that the early-bearing habit of a variety is of very great commercial importance, for even if such varieties are not suitable for permanent planting they may be used as "fillers" and removed as the permanent trees increase in size. The particulars provided by Mr. Macoun refer to varieties recommended for use in eastern Ontario

and Quebec, and they suggest the desirability of similar information for the several districts of the United Kingdom:—Wealthy, 3 years, 9 months; Milwaukee, 4 years, 3 months; Dudley, 4 years, 5 months; McIntosh, 5 years, 5 months; Duchess, 6 years, 1 month; Fameuse, 6 years, 2 months. Hibernia is given the mean or average age of 10 years, but the greatest number of trees bore at 5 years after planting.

Scottish Potato Trials.—On the invitation of the Board of Agriculture for Scotland a large company of Potato experts visited the testing grounds at Philipstoun, Linlithgowshire, during the past week for the purpose of witnessing a demonstration of the work being carried out there in testing new varieties of Potatoes in reference to their resistance to Wart Disease. The tests were explained in detail by Mr. Thomas Anderson, Director of the Scottish Boards' Seed Testing Station, and Mr. Adam Miller, his assistant. It was stated that in the first-year trials 113 varieties were being tested; of these thirty-six were identical with established standard varieties, and thirty-four had proved susceptible to Wart Disease, twelve of them being distinct seedlings. In regard to the second-year trials, some of the seedlings recommended in 1924 appeared to be very susceptible to blight and mosaic disease and did not show the promise of last year. In the single-tuber trials there are no fewer than 684 seedlings, and the principal senders were Mr. Donald McKelvie, Lamlash, Messrs. McGill and Smith, Ayr; The Scottish Society for Research in Plant Breeding; Mr. S. T. Farish, Lockerbie; Mr. A. R. Findlay, Auchtermuchty; and Mr. G. R. Wilson, Largo. There was a special demonstration of Arran Consul and X9, and the control variety Field-Marshal. Special roots of each were exhibited, and some of the roots of the first-named gave over seven pounds of large sound tubers. The average weight per root was approximately five-and-a-half pounds, which, calculated on the basis of spacing at Philipstoun is equivalent to twenty-two tons per acre. Field-Marshal, which unfortunately showed obvious signs of Wart Disease, also gave a great crop and the quality was stated to be excellent. Owing to the early drought it was doubtful for a time if useful results would be realised, but the rain which followed saved the situation. Wart Disease appeared in practically all the non-immune varieties, the only exception being British Queen. A feature of the trials has been the yield weights which were heavier than ever experienced before, but the tubers were rougher owing to the rain which, following the drought, set up second growth. This also caused a considerable amount of cracking in the tubers.

Derris.—The great value of Derris powder as an insecticide has been proved in recent years in this country, while in Sumatra it has long been used to kill caterpillars on Tobacco plants. There are two species with insecticidal properties, *Derris elliptica* and *D. uliginosa*, but apparently the former species is the most effective. According to *The Pharmaceutical Journal and Pharmacist* *D. elliptica* is cultivated in the state of Perak, and is indigenous to Malaya, Burma, Java, Sumatra, the Philippine Islands, China, Siam, Cochin China and Laos, and has been used for a long time as a fish poison in eastern Asia and the Malay archipelago, one part of the root in 3,000 parts of water being sufficient for the purpose. The plant forms a large, robust liane, seven to ten metres high, with blackish, warty branches, the young twigs being velvety and silky. The powder is obtained from the root, but in the case of *Derris uliginosa* the parts used are the stems and rhizome. The active property is derrid, an acid resin which yields salicylic acid and pyrocatechin when heated with an alkali. That portion of the resin that is soluble in chloroform is the active principle. It exerts its action upon insects either through the stomach or by simple contact. It is also efficacious for dog fleas, chicken lice and house flies. The propagation of Derris by means of cuttings is simple, and may be carried out in the shade furnished by cocoa or rubber trees.

The Action of Sulphur Dioxide on Fruit.—According to *The Annual Report* of the Long Ashton Research Station, apart from the preservative action of sulphur dioxide by inhibiting the growth of micro-organisms, this substance has a definite effect on the fruit itself. Its action at strength 0.08 per cent. solution on certain enzymes naturally present in the fruit was investigated some time ago by Miss Watson and Mrs. S. P. Wiltshire in the laboratory at Long Ashton. They found that the enzymatic activities of diastase, invertase and zymase were completely stopped in a solution of that strength. It was concluded that the same would be the case when the fruit itself was kept in a similar solution. Subsequent experience in practice has proved this conclusion to be justified. Probably all enzyme activity within the fruit is stopped and the enzymes themselves destroyed, the living cells of the fruit being killed at the same time. Apple-yard, continuing work on this part of the subject at the Campden Research Station, has recently obtained direct evidence on this point. It has been found that fruit preserved in this way shows a progressive loss of "setting" or "gelling" power when made into jam according to length of time it has been stored in the solution. The suggestion has been made that this reduction of "gel" value is due to reduction of pectin content by its conversion to pectic acid or other derivatives by the action of the enzyme pectase. On that assumption this enzyme would need to be resistant to sulphur dioxide. The evidence available is against this view. Apart from the improbability of a particular enzyme remaining unaffected when all others are destroyed, there is no occasion to assume that the pectin change in this case is brought about by the enzyme.

Newsvendors' Benevolent and Provident Institution.—The annual dinner of the Newsvendors' Benevolent and Provident Institution will be held at the Hotel Cecil, London, on November 3rd, under the Presidency of the Hon. Frederick Lawson. The newsvendor works early and late that the public may be provided with its newspapers, and it is the purpose of this Institution to provide, for those who may fall by the way, pensions in old age or incapacity, or grants and other assistance to members, their widows and orphans who may be in temporary difficulties. The funds of the Newsvendors' Institution, which was established in 1839, are carefully administered. There are at present sixty-eight pensioners, whose welfare is constantly borne in mind. Sick parents are sent to convalescent homes, orphan children are cared for in selected institutions, and financial help is given in cases of need. Contributions should be sent to the Hon. Frederick Lawson, *The Daily Telegraph*, 135, Fleet Street, E.C.4.

Appointments for the Ensuing Week.—Monday, October 12: United Horticultural Benefit and Provident Society's meeting. Tuesday, October 13: Jersey Gardeners' Society's meeting. Wednesday, October 14: Salisbury and District Gardeners' Mutual Improvement Society's meeting; Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting. Friday, October 16: Manchester and North of England Orchid Society's meeting. Saturday, October 17: British Mycological Society's foray with Essex Field Club; Carnwarth Chrysanthemum Society's show; Peebles Chrysanthemum Society's show.

"Gardeners' Chronicle" Seventy-five Years ago.—*The Kamchatka Rhododendron*; (*Rhododendron Kamchatcense*).—For this great rarity and exquisitely beautiful shrub we are indebted to Mr. Loddiges, whose predecessors raised it from seed about twenty years ago. It appears to be of slow growth, as the plant is now only about ten inches high, forming a compact bush. Mr. Loddiges finds it perfectly hardy, but it is best kept under a north wall. It is admirably adapted for rockwork in a shady situation. According to Pallas, this charming plant grows abundantly near the Sea of Ochotsk, in the

peninsula of Kamchatka, and in Behring's Island in muddy, mountainous places. There it begins to blossom from the end of July, grows vigorously to the end of August, and ripens its seeds about the end of September. The root, he says, is woody, dry, as thick as a quill, and forms creeping runners. From this arise a great many leafy stems, which every here and there break into flower. The leaves are close together, alternate, sessile, somewhat ovate, tapering downwards, somewhat five-nerved, rather sharp pointed, perfectly entire, and fringed with very perceptible hairs. The peduncles are two or three inches long, closely surrounded by small leaves, besides which there are generally about two ovate sessile leaves; they are two-flowered, or occasionally one-to-three-flowered

Sir W. Hooker gives Banks's Island and Port Edgcombe, on the north-west coast of North America. It is, therefore, clear that it belongs to climates far more rigorous than our own, and with much worse summers. And this is the key to its cultivation. Like the *R. Chamaecistus*, it is unable to endure the drier air and brighter summer sky of England; but shrinks from our heats, and withers beneath such evaporation as leaves undergo in this climate. Hence the wisdom of the treatment which consists in keeping such plants in a cold pit closed up all day and uncovered all night. Mr. Loddiges' cultivators made nothing of it till they put it under a north wall where Liverworts and such soft, flabby plants delight to dwell. We do not believe that any botanist

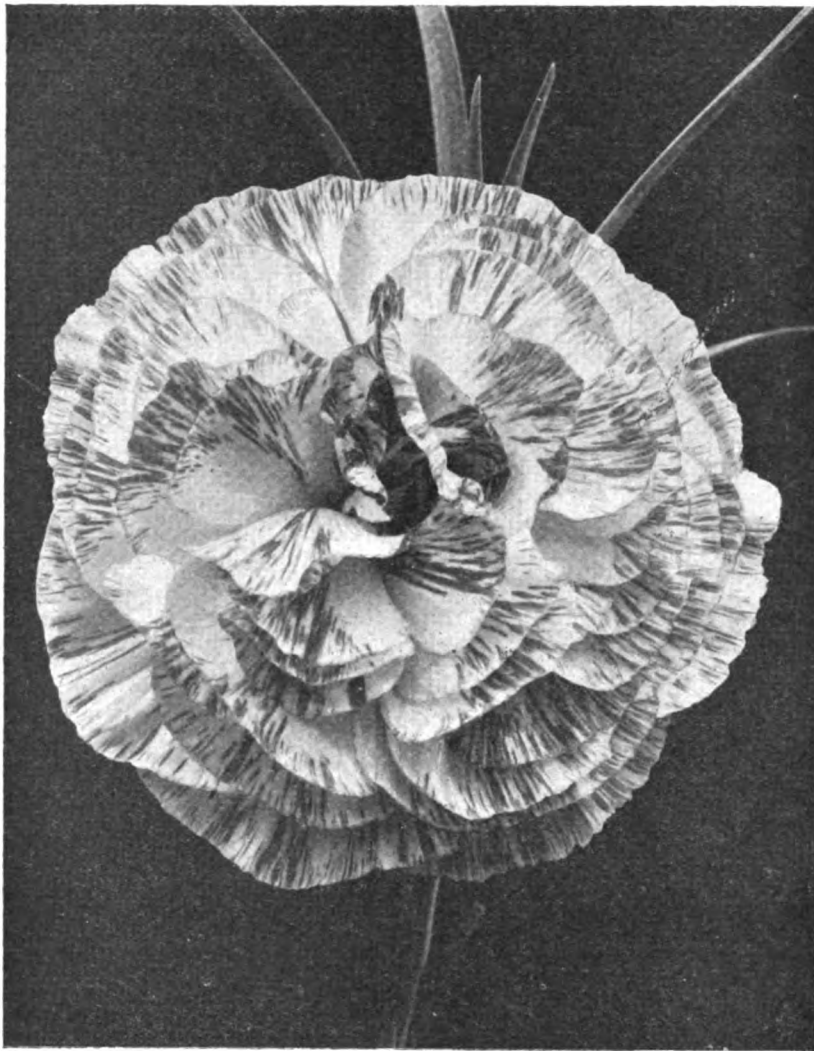


FIG. 113.—CARNATION MRS. E. CHARRINGTON.

Photo A. H. Knapton.

(see p. 287).

and very hairy. The flowers are nodding, and deep purple. The sepals leafy, three-nerved, two being nearer to each other than to the others. The corolla is irregular, rotate, with a very short funnel-shaped tube, and a deeply five-lobed limb; the segments lanceolate, downy at the throat, unequal, the three uppermost rather the smallest, and less deeply divided, spotted with crimson at the base, standing up like a hood, the two lower very much spreading and spotless. The stamens, which arise from the bottom of the flower, are ten, curved downwards, the upper shortest, the lower twice as long as the others, not so long as the corolla, with ovate, double deep purple anthers. (F.I., *Rossica*, Vol. 1, p. 40). To the locality given by Gmelin and Pallas, Ledebour adds the following: Mount Marekan, according to Turczaninoff, the country of the Tschuktskes in the Bay of St. Lawrence, Kamchatka and Unalashk.

would have thought of calling this a *Rhododendron* had not Linnaeus set the example by including the *Chamaecistus* in that genus. Its great leafy calyx, flat corolla divided almost to the base, and nearly equally spreading although very unequal stamens, are quite at variance with *Rhododendron*. Neither has it the scurfs or stellate hairs observable, we believe, in all the genuine species in which hairs are ever found. On the contrary, the hairs are always simple, in which respect it agrees with the Chinese Azaleas, to which it is more nearly related than to *Rhododendron* but from which its corolla, almost divided into separate petals, sufficiently divides it. To this may be added the singular gland at the end of the leaves, a nearer approach to which is to be found in the scaly Azalea (*A. squamata*) than in any *Rhododendron* we have examined.—*Parton's Flower Garden*, *Gard. Chron.*, October 12, 1850.

The Week's Work.

THE FLOWER GARDEN.

By W. AUTON, Gardener to Viscount ELYDEN,
Pyrford Court, Woking, Surrey.

Roses from Cuttings.—Rambler and climbing Roses root freely from cuttings and are preferable on their own roots, except perhaps on very heavy soils. Well-ripened wood of the current year's growth should be selected, made into cuttings about a foot long and inserted firmly to about three-quarters of their length in nursery rows. Much stronger plants will result from good cuttings inserted directly in the open ground, and, given careful attention, than from those inserted in pots and wintered in a frame. Where large numbers of Roses are grown it is good policy to insert a few cuttings of each variety every year so that young, vigorous stock is always available when replacements are necessary. Ample room should be given when the cuttings are put in, as first year's growth is very vigorous and if sufficient space is not given for each plant to develop hopeless inter-lacing will result. Roses intended for planting in formal hedges may easily be raised from cuttings and those grand old varieties Gruss an Teplitz and Fellenberg, both splendid sorts for the purpose, root freely and grow vigorously on their own roots. Many of the more vigorous varieties of H.P. and H.T. also root freely from cuttings, and when Roses are grown in pots for special bedding purposes, as sometimes occurs, this is an easy and quick way of raising the stock.

Salvia patens.—The blue border is not easy to maintain in full beauty over a long period, as the efflorescence of many of its occupants is of comparatively short duration. This beautiful Salvia is one of the truest blue plants that we have, is in perfect condition from June till the end of the season, and is invaluable for the border and as a bedder. Tubers should now be lifted, stood in boxes of leaf-mould and sand and placed in a frost-free structure.

Gladiolus.—All sections of this remarkably handsome genus have flowered with great freedom this season, and even at this late period clumps of them are bright spots in the borders. So soon as they pass out of flower, however, they should be lifted. The corms do not ripen sufficiently for storing if left in the ground beyond the end of this month, particularly if the soil is of a heavy nature, and even if the stems are still green it is better to lift them, tie them in bundles and hang them in an airy place to dry. After the stems have dried off completely they should be cut off with a sharp knife; the corms may then be laid out on a shelf for a few days and when thoroughly ripened they may be stored in bags and kept in a cool, dry room.

Vincas.—The Periwinkles are very accommodating plants, and among the most useful for covering bare places in partial shade or under trees where many subjects will not succeed. The small-leaved species, *V. minor*, is a neat plant, and is one of the best subjects we have for covering the ground under trees near the mansion where neatness is essential. It soon forms a dense green carpet if planted at this season, and in the late spring its lovely blue flowers make a charming picture in combination with the dark green foliage.

Anemone japonica.—The lovely Japanese Windflower is amongst the best of our late summer and autumn flowering plants. Always a difficult subject on hot, dry soils, the moisture and coolness of the present season have suited it admirably, and it has for more than a month been a feature of the herbaceous border. Although periodical division and replanting must, naturally, be undertaken, it resents undue interference, and the clumps should be

liberally fed and kept in position until distinct signs of exhaustion occur.

Canterbury Bells.—To obtain the best results from these popular biennials the plants in nursery rows should be transferred to their flowering quarters as early as possible so that they get sufficient time to be thoroughly established while the soil is still warm.

Alterations.—Any alterations or renovations contemplated in beds, shrubberies, paths or lawns should be definitely decided on so that the details of preparation may be carried out while the soil is in good working condition.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Watering.—Of the manifold operations connected with plant culture there is none other which calls for the exercise of discrimination on the part of the plantsman to a greater degree than that of watering. Choice of soil, temperature and situation are all important but, failing intelligent anticipation and judgment in supplying plants with necessary moisture, success cannot be achieved. To say that the operation calls for greater intelligence at any particular season of the year would be wrong. Whilst during the summer, possibly greater vigilance is necessary to guard against the danger of plants being insufficiently supplied, it is undoubtedly true that during autumn and winter the risks attending the over-watering of plants in pots are greater (and I venture to say that more plants are injured or are killed by over-watering than by the opposite treatment) therefore demanding very careful judgment on the part of the operator during the dull seasons of the year. From now onwards, the general watering of the occupants of the plant houses should be carried out during the forenoon. In the case of Chrysanthemums and some other soft-wooded and quick-growing plants, however, it may be necessary on bright days during the next week or two, to water some of these plants in the early afternoon, which would otherwise suffer if left until the following morning. The morning watering of Carnations, Cyclamens, most stove plants, and all hard-wooded plants should suffice for the day at this season, provided the examination is thorough. When once it is decided that a growing plant needs water it should receive sufficient to thoroughly moisten the whole of the soil.

Ascertaining if Water is Necessary.—If water, applied to a plant, does not readily pass through the soil, then it has either been watered prematurely or the drainage is defective. To be able to determine whether a plant needs water or not is a practice which, to young gardeners, seems one of the most difficult to acquire, though it is of the first importance. How often have I seen the operation being performed by young men who apparently have been anxious to do the right thing, but their examination of a plant having left them in doubt have settled it by applying water to it, which it has no more needed than does the ocean. Being doubtful, he should have passed the plant over. I know of no better method of examination for the beginner than that of giving each pot a sharp rap with the knuckles of the hand. When he has become proficient, his judgment can be as well exercised by the use of a knobbed stick and to the saving of his knuckles.

Watering Bulbs in Pots.—As is the case of all newly-potted plants which require to be watered very sparingly until free root action is taking place, bulbous plants in pots need to be watered with great care in the early stages, to prevent the souring of the soil before roots are made. This precaution, however, should not be carried too far, for when the pots have become well filled with roots, they will need copious supplies; the disappointment caused by bulbs going "blind" may often be attributed to an insufficiency of water at the time when the flower scapes are being developed.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Harvesting Apples.—As I have already stated in a previous calendar, Apples are a week or ten days in advance of most years for storing, and by the time these notes appear there will be only the very late ones to harvest, such as Crawley Beauty, Edward VII, Annie Elizabeth, Court Pendu Plat and Cornish Aromatic. Many Apples fell during the rough, stormy weather of the last week in September, but the high winds would not have had quite such a disastrous effect had the Apple season been a little more in accordance with other seasons.

Root-Pruning.—Pear trees on walls and other wise, from which the crops have been gathered, also trees that have not fruited this year, should be examined to see if root-pruning is necessary, and if so, the work should be put in hand forthwith. Pears are always ready for this operation earlier than most of other fruit trees unless they are carrying fruit. If any of the trees are old and worthless, or the varieties not satisfactory, they should be dug up and more suitable varieties substituted. In digging the tree out, remove all sour soil, and substitute the best obtainable; if good loam is not procurable, give the soil is liberal dressing of fresh lime, decayed leaves, wood ash, or any other material that will keep the texture open. Before placing the fresh compost in the hole, it should be thoroughly mixed and as the work of filling in the hole proceeds, the soil should be trodden very firmly. If of a binding nature, allow it to sink naturally, and defer planting young trees until a little later.

Grease Bands.—Where grease-banding is practised I would advise the bands to be put on the stems not later than the third week in this month. If the surface bark is rough it should be scraped off to allow of a smooth surface for the band to rest on. Do not put the grease on too thickly, but replenish it periodically. The grease is often washed off by heavy rains in winter and early spring.

Plums.—The Plum season is now nearly at an end. Old trees that are exhausted or becoming very unshapely should be dug up and the ground thoroughly cleared of the old roots and the latter burned. These old trees may be substituted by young trees most suitable for the requirements of the establishment. If they are to be grown on walls the choicer dessert sorts should be selected and the finest in fruiting and best flavoured are the members of the Gage family, following with Coe's Golden Drop, Coe's Violet and Reine Claude de Bayay to prolong the season. Before planting the new trees the ground should be trenched two or three spits deep and the old exhausted soil taken away, substituting sweet soil of an open texture but not excessively rich. A liberal sprinkling of lime will help to sweeten the old soil if fresh soil is not available. The present is the most suitable time to thin the branches of Plum trees while the leaves are still hanging.

Preparing Ground for Planting Fruit Trees.—Where Apples and Pears are to be planted the ground should be trenched at least two feet deep and more if required. If the soil is of a loamy nature resting on sand or gravel it will not require any opening material mixed with it, but if it is a heavy loam resting on heavy clay use plenty of suitable materials to keep the texture open as much as possible, such as finely broken bricks, old mortar rubble, ash from the garden fire or the stove hole, half decayed leaves or old potting compost with an addition of lime. Well incorporate these materials with the ground when digging it. If the work is delayed by unfavourable weather and the trees arrive from the nurseries in advance, they should be heeled in until they can be planted with safety. Dig a trench long and deep enough to lay the roots of the trees in and cover them with soil, making the latter sufficiently firm to keep frost from the roots. After the planting is completed cover the surface soil around the newly planted trees with sufficient litter or fallen leaves to keep frost from the roots.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Pot Strawberries.—See that the forcing Strawberries are kept free from weeds and all runners pinched out immediately they develop. Afford the plants plenty of room to allow all the sun and light possible to reach the crowns. The plants are better stood on boards at the present time to prevent worms from entering the pots. Watering should be done with great care; the pots being well filled with roots the soil will readily dry out. Weak liquid manure afforded the roots on three occasions weekly will prove very beneficial when the plants are needing moisture daily. Should mildew attack the plants they should be dipped in a solution of sulphide of potassium at the strength of half-an-ounce per gallon of water. If worms have entered the pots, give the soil a watering with clear lime water, which will bring the worms to the surface, when they may be picked off and destroyed.

Late Melons.—Keep the soil in which late Melons are growing rather dryer than hitherto, and so soon as the fruits begin to set, give only sufficient water to prevent the plants flagging. Keep all shoots pinched out to give the fruits every chance of swelling and ripening quickly. Admit a little air through the top ventilators during mild nights to counteract a damp atmosphere and prevent moisture condensing on the fruits. Very little, if any, ventilation will be necessary in the daytime from now onwards. Cut the fruits directly the first signs of cracking from the stem is visible. Endeavour to keep the temperature at 70° by night with a rise of 10° during the day, and still more with the aid of sun-heat. I have found these late crops of Melons greatly appreciated for shooting parties, and in establishments where a large quantity and variety of dessert fruits are required.

Tomatos.—The plants intended for a winter crop are now growing much slower; give them every encouragement to continue growing and maturing their fruits. Pick off all fruits so soon as they commence to colour and ripen them artificially. Keep the house well-ventilated and maintain a night temperature of 55°; give the roots weak manure water on alternate waterings, and keep all side-shoots pinched out.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Asparagus.—The current season's growth should be cut off the plants, wheeled away and burned, unless required for use as protecting material in frosty weather. The Asparagus beds should be finally cleared of weeds and then pricked over with a fork; in doing this be very careful not to damage the roots. Give all the Asparagus beds a liberal mulch of farm-yard manure.

Turnips.—Turnips will keep much better if they are lifted now than if left in the ground. Heavy rains and frosts will have the effect of splitting open and rotting many of the roots. If stored in a clamp in a cool, dry shed they will keep sound for a long time. Garden Swedes may be allowed to remain undug for the present.

Seakale.—If forced Seakale is required for use soon, some of the more forward crowns that are showing signs of ripening their foliage may be lifted and used for forcing. The main batch should be allowed to remain undug for some time yet, in order that the foliage may become thoroughly ripened. The Mushroom house, being darkened, is a very suitable place for forcing Seakale. Put the crowns in an upright position either in boxes or beds, using practically any soil for the purpose. Damp the crowns over periodically with tepid water. Lift more crowns and force them as required, so that regular supplies will be maintained.

Rhubarb.—A few crowns of Rhubarb may be lifted for forcing. If there is room in the Mushroom house, put the crowns in a bed of leaves, or even on the floor of the house. Rhubarb will force well under the staging in a greenhouse.

Cabbages.—The planting of spring Cabbages should be completed by this date. Keep a close watch for slugs, and any gaps that may exist in the earlier beds should be made good at once.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Azara microphylla.—This handsome shrub may be trained easily on walls, and with

destructive to these plants, and will, if not trapped, ruin the plants in a very short time.

Tuberous-rooted Begonias.—These Begonias are best left in the ground until seared somewhat severely by frost. In lifting the plants cut back carefully with a knife any portion of the stem that may yet adhere to the tubers. Spread the latter out thinly for a few days in an empty frame to dry them, turning them over frequently. When thoroughly dry store them in boxes, working leaf-mould between the tubers. They may then be stacked in a cool, dry, frost-proof shed until next March.

Celery.—Earth up late Celery whenever there is a favourable opportunity, such as after a dry day, when the soil will be in good condition for breaking up into a finely divided state with the spade. Place the soil firmly around each

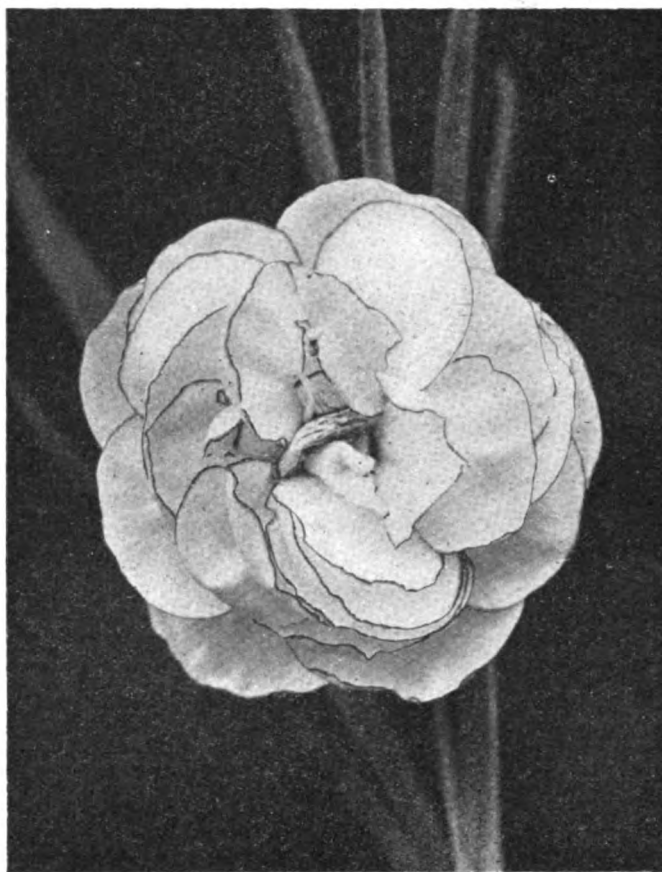


Photo A. H. Knapton.

FIG. 114.—CARNATION ECLIPSE.

(see p. 287).

its dark, shining foliage presents a pretty appearance during both summer and winter; the growths lending themselves to nailing. Later, when established, pruning may be done with the knife, and this is best undertaken in the spring. It is unfortunate that this shrub can only be used in northern gardens, if the district is exposed and at a high altitude, as a wall plant. A fairly rich soil is advocated, and any exposure other than east or north is suitable.

Border Carnations.—Layers of border Carnations should now be well rooted, and this week they may be removed to their winter quarters. I recommend potting them, the best results being obtained from potted layers. After they are potted the plants should be plunged up to pot rim in a cold frame and grown in a continuous current of air. The protection of sashes or lights is only afforded to these plants during winter to ward off heavy falls of snow or to protect them from exceptionally severe weather. During the time the layers are in the frame a close watch must be observed, especially in severe weather, as mice are very

plant to the level of the heart. In earthing up Celery for the last time endeavour to form the soil in the shape of a crown, or arch, in order to throw off as much rain as possible; if left hollow in the centre moisture will reach the plants and spoil them. This precaution is especially necessary if the soil is of a retentive nature.

Parsley.—A number of Parsley plants should be lifted carefully with balls of earth and planted in a cold frame. The frame plants will be of great use in case of a shortage of leaves in the open later; they are also convenient to pick from during snowy weather.

Winter Vegetables.—Crops of Brussels Sprouts, Savoys and other Brassicas intended to withstand the winter require attention. Remove all decaying lower leaves as they fade. Such leaves should be dug in the ground as manure and not thrown away and wasted. If the variety of Brussels Sprout is a tall one and the district exposed, extra support, beyond drawing the soil to the plants, will be required in order that the plants may not be displaced by strong winds.

TREES AND SHRUBS.

POTENTILLA RUPESTRIS.

THOUGH to the casual eye this beautiful *Potentilla* may be regarded as an ordinary herbaceous plant, it is in reality a sub-shrub, for it has a short, woody, perennial stem from which the leaves and flowering sprays arise annually. The former are long, and graceful, and each consists of several pairs of fresh, green, glossy leaflets, oval and toothed. From the centre of this tuft the flower stems arise twelve to eighteen inches high and, breaking into several branches, terminate in large, pure white flowers. The coppery hue often assumed by these stems affords the plant an additional charm.

P. rupestris is a native of this country and the European Alps, but its only station with us is confined to a comparatively small area among the Welsh hills. It is a limestone species, but in the garden is not at all particular as to soil, thriving in any dry, sunny place, having a partiality for a rocky root-hold. There are several forms of this delightful plant, the most distinct being a very dwarf one, a few inches tall, often listed as *P. pygmaea*. *J.*

ST. DABEOC'S HEATH.

THE Irish, *Connemara* or *St. Daboc's Heath*, *Daboecia polifolia*, in half-a-dozen varieties, is flowering freely at Kew in several places, one large group in particular on a sloping bank near the *Azalea Garden* being very showy. The best effect is obtained by planting the varieties in mixture, there being in addition to the type and *var. alba*, *vars. bicolor*, *atropurpurea*, *purpurea* and *alba stricta*. In most nursery catalogues the generic name of *Menziesia* is preferred for these useful Heaths, which, in mild localities, are more or less in flower all the year round, with, as at Kew, the most showy period from June until November. *A. O.*

HARDY FLOWER BORDER.

LOBELIA CARDINALIS.

AFTER growing this splendid plant for many years in the north country where it occupies a prominent position in all kinds of bedding schemes, I have always been disappointed with its behaviour in the south until this year. The moist conditions and cool temperature of the present season, however, have suited it admirably, and from the end of July until now, its magnificent spikes, over four feet high, bearing large, brilliant flowers have stood up in regal splendour.

Essentially a moisture-loving plant, it revels in the moist climate of the north, but is usually a difficult subject on the dry, sandy soils of this district. It is quite impossible to get it to flourish on such soils without improving the hygroscopic condition, and for this purpose there is no better material than well-prepared vegetable manure which, mechanically, serves the double purpose of increasing the moisture retaining powers of the soil and fosters that equable temperature so desirable for steady growth.

The dark, metallic foliage and intense, crimson-scarlet flowers give the plant an exceptionally striking appearance and admirably fit it for mass grouping effects. It is also singularly effective in conjunction with *Dahlias*, *Salvia splendens*, *Zinnias*, *Antirrhinums* and others in the scarlet border, and adds materially to the richness of this essentially late summer garden.

The plant is not quite hardy, though in favoured positions in the south it will survive the winter outside if protected with a little ashes. The plants generally lose vitality, however, and it is much better to lift them so soon as growth ceases, and place them closely together in a cold frame until growth commences again in the spring, when they may be divided and grown on under cool conditions ready for planting out in May. *W. Auton, Pyrford Court Gardens, Woking, Surrey.*

SANGUINARIA CANADENSIS.

THERE are many items of interest to growers of hardy flowers in the delightful contribution "Some of Canada's Wild Flowers," by the Lady Byng of Vimy, which appears in the most recent issue of the *Journal of the Royal Horticultural Society* (Vol. L, part 2, September, 1925). Among these is a reference to the lovely *Sanguinaria canadensis*, which may be of assistance to some who have not succeeded with this plant or who have not achieved the results they desired and anticipated. Lady Byng writes:—"Next comes the Bloodroot (*Sanguinaria canadensis*), with its pure white, golden-anthered flowers and grey-green leaves, hugging the limestone rocks." Lady Byng proceeds to remark upon the superiority of the plant compared with *S. canadensis* at home, where it does not appear to have been nearly so fine as in Canada.

While much of the difference may depend upon the stock cultivated, which shows great variation in freedom of bloom and size of flower, it is quite probable that the addition of lime to the soil may prove highly beneficial. I have a wide acquaintance with the cultural literature of the Bloodroot, but I have no recollection of ever having observed lime being prescribed for the improvement of the plant, and I think that the suggestion conveyed by Lady Byng's reference to the habitat of the plants seen by her in Canada may be helpful in the extreme. This Bloodroot is one of the most beautiful of our Spring flowers, either alone or associated with other flowers. Association with Dog's Tooth Violets is suggested by an able horticulturist, and a fascinating picture might well be formed by the Bloodroot and the *Erythroniums*. Before concluding, I would suggest that all who have an opportunity of doing so, should peruse carefully the most interesting contribution by the Lady Byng, feeling assured that all who cultivate Canadian flowers will derive not only high pleasure but acquire valuable cultural information by so doing. *S. Arnott.*

BULB GARDEN.

AUTUMN CROCUSES.

AUTUMN Crocuses have been so beautiful this week (October 1) and have drawn so many expressions of astonishment from those of our neighbours and visitors, who have seen them, that I cannot help wondering why it is that they are so little known and grown.

In the first place, autumn Crocuses must be carefully distinguished from Colchicums, with which they are very generally confused. Yet the differences are very apparent. Crocuses, which belong to the Iris family, have only three stamens, while Colchicums are allied to Lilies and have six. Both are, for the most part, leafless when the flowers are produced, but in spring, when the leaves appear, the difference is very obvious, those of the Crocuses being narrow and grassy, while those of the Colchicums are very large and broad.

In some years the earliest Crocus to flower, that is available in any quantity, is *C. zonatus*, and this comes into bloom at the end of August or early in September. It derives its name from the girdle of orange blotches which encircles the throat of the flower. The colour is a pale pink, and there is some variation in the exact depth of the shade. Even though it is a native of the mountains of Asia Minor and Palestine, this Crocus is extremely easy to cultivate in any fairly light or well-cultivated soil, and it increases rapidly by small, almost cylindrical cormlets, which are very different from the large, flat corms of the mature plants. In this present year, for some reason which I cannot suggest, *C. zonatus* has only just come into full flower, at the same time as *C. speciosus*, *C. pulchellus* and several other species.

Of these species *C. speciosus* is the largest and finest, and also the most variable. The colour is usually some shade of blue-lilac, and

the paler ground is closely veined with thin lines of a deeper shade. When the flowers open in the sunlight, the central tuft of orange-scarlet stigmata is very noticeable.

Some varieties are very pale on the backs of the outer petals, while others again have dark purple "stems." These are, of course, not really stems at all but the perianth tubes, which connect the segments of the flower with the ovary which remains below the surface of the ground until the seeds ripen in spring. There are also several white varieties, one of the best known being of a creamy-white shade with very pointed petals and conspicuous orange stigmata.

If *C. speciosus* is the largest of the early autumn Crocuses, *C. pulchellus* is surely the neatest. There is something particularly refined about its pale lavender flowers with their few deeper bluish veins. The petals seem of better substance, and therefore less flimsy, than those of the other species in flower at the time. Another peculiarity is to be found in the white anthers, a character it imparts to hybrids which frequently appear between this species and *C. speciosus*. These hybrids may be mistaken for forms of *C. speciosus*, but are readily distinguished by their white anthers. *C. pulchellus* comes from the neighbourhood of Constantinople, both on the European and the Asiatic side of the Straits, while *C. speciosus* comes from the region of the Caucasus and Armenia.

Another species, which flowers at the same time, is the Pyrenean *C. nudiflorus*, which has the peculiar habit of increasing by means of underground stolons. These are long and narrow, quite unlike the ordinary Crocus corm, and resemble rather a very thin and much elongated Gladiolus corm. The tall flowers are of a redder shade of purple than any of the species already described, though they are not unlike those of *C. medius* from the hills to the north of the Riviera. The name *medius* was given apparently because, in the view of its author, this species comes half-way between *C. nudiflorus* and *C. sativus*, the Saffron Crocus. *C. medius* is slightly later in coming into flower than *C. nudiflorus* and the large flowers open wide to display the bright scarlet stigmata.

One of the most distinct of all Crocuses is *C. iridiflorus*, from the mountains of Transylvania, and it differs from all other Crocuses by having three large outer segments and three much shorter, pointed inner segments. The colour varies in the exact shade of lilac or purple and it is the only Crocus in which the stigmata are also lilac. Even more beautiful is the pure white albino form, which has a conspicuous tassel of white stigmata.

It is sometimes said that *C. iridiflorus* does best in moist, shady spots, where the comparatively broad leaves remain green until quite late in the season. My own experience, however, of the white form especially, has been that it does well in full sun. A curious fact is that though the foliage is broad, the corm is smaller than that of most other Crocuses.

All these Crocuses are very welcome, when their flowers appear in thick patches among dwarf shrubs towards the front of a border. Some will succeed in grass, which is not too luxuriant, provided that the grass is left unmown in spring and early summer, until the Crocus leaves have turned yellow and faded away. The corms may be left undisturbed for several years, and then it is better to lift them at the end of June or in July and renew the site by digging in old potting soil or spent manure. The corms should be replanted without delay, for growth begins early and *C. zonatus* especially will be found in flower in September, even if the corms are still dry and stored away in paper bags.

The chief enemy of the Crocus is the mouse, and, unless this marauder is caught so soon as he has begun to sample the corms, his appetite appears to be insatiable until the whole colony has been devoured. *W. R. Dykes.*

SCHIZOSTYLIS COCCINEA MRS. HEGARTY

SCHIZOSTYLIS coccinea Mrs. Hegarty, a prominent plant of recent introduction, flowers at the end of September.

This Kaffir Lily is of easy culture and very

hardy. The bell-shaped blossoms are of a soft clear rose-pink. The habit of the plant is similar to that of the Montbretia. It is a most valuable and beautiful flower for cutting.

Very late flowers may be gathered if protection is afforded the species by means of a cold frame, and as the species seldom exceeds a height of eighteen inches protection is not a difficult matter.

A bed of these plants may be grown on a border for the purpose of supplying late flowers. Upon the approach of bad weather frames may be placed over them, and by this means it is possible to have flowers until the end of the year, or possibly, later. Though not fastidious as to soil, the Kaffir Lily appears to thrive best in an open, well-drained bed composed of old garden soil containing an abundance of humus. *C. Ruse.*

FLORISTS' FLOWERS.

SELECT BORDER CARNATIONS.

THE season for planting Carnations is with us, and those who layered early reap the advantage of being able to get their stock established, which is a great factor in the successful cultivation of these plants, for the stronger root-hold they obtain before winter sets in with its inevitable gales, frosts, and nipping winds, the better. Very firm planting is necessary, and after frosts it is advisable to tread around plants that may have become loosened.

Damp must be avoided at all costs. A heavy, wet soil is fatal, and in such soil greater facilities for drainage must be provided by the incorporation of sharp grit, sand and rubble, and the beds should be raised a few inches above the ground level.

There are many strong and beautiful varieties in commerce which do not require to be grown under glass to produce a perfect bloom, while for show purposes a "bloom protector" will be all that is necessary to keep the flowers in condition until required for the exhibition table.

Growing practically all the best varieties as I do, I am able to compare the different habits of growth and to note those that never disappoint but can be trusted to give their best, if treated with the ordinary care that every plant demands.

Taking some of the yellow ground fancies, all of which do best in light soil, I would select the beautiful Viceroy, Paladin, Dr. Connor, a striking and lovely flower, Linkman, Hornet, a new variety marked brilliant rose-scarlet, Ivan Lowe, Highland Mary, Bookham Belle, and Dr. Stone, the last named also new and marked vivid rose. Highland Mary has somewhat slender grass but a beautifully coloured flower, and while all the above should make good second-year plants, Viceroy, Bookham Belle, and Hornet are very compact growers.

I always grow Lieut. Shackleton, layering it every year, but although I consider it the loveliest yellow-ground Carnation and find it most satisfactory, it does not give many layers, and people are shy of having it. The bloom is the largest I know, and it is best not disbudbed on that account. The old Gloriosa is very floriferous and most dependable as to calyx.

The white ground fancies, generally speaking, are refined and shapely. Mrs. Hawksbee, Sir D. Haig, Steerforth, heavily perfumed, Ian Ellen, St. Clair Amos, Prospero and Mrs. E. Charrington (Fig. 113), are all excellent for the open border and of exhibition form. The two latest novelties are John Stobart, barred soft rose, a large flower of perfect shape, and Ravenswood, heavily striped with bars of maroon crimson and one that bids fair to become a standard variety. The white ground seedling Mrs. F. Seymour, which was the premier bloom at the July show at Vincent Square, should also prove something exceptional when put into commerce next autumn.

In crimson selfs, The King, Gordon Douglas, and King of Cloves, are all first class, and Joan Wardale, awarded a premier and F.C.C. last

season as a seedling, is a beautiful flower and an acquisition. Mary Murray, Border Yellow, and Bookham Sunshine are good yellows, and we now have the novelty, Valentine, which promises to outshine them. Winsome Clove adds lustre to this popular class, and is of a beautiful old rose colour. Other fine varieties are Spicy Breeze, a most powerfully-perfumed crimson, of perfect habit and with rigid stem; Dusky Clove, Purple Clove, Duchess Clove; and in rose and pink selfs, Benedicts, a novelty for this autumn, a deep shade; Salmonea, Bookham Rose, Peach Blossom, and Margaret Keep, the last a highly Clove-scented variety. The foregoing give a full range of colour.

Snowline is the best white I have grown

an excellent garden variety, strong and floriferous and I have exhibited it, but it is slightly fimbriated.

The nondescripts, almost without exception, give well-shaped flowers and have strong habit and delightful colours. The Cadi, rose madder, striped blue and scarlet; Mrs. A. Brotherton, Clove-scented; Cleopatra, madder ticked with scarlet; Penelope, plum, striped rose, all give blooms fit for the show-board, and add brilliance to the garden beds. Selfs, to some, can be planted with them to advantage, and grey heliotrope selfs are very useful if two varieties of selfs are required in one bed, as they do not clash with anything. Lovely as the Grey Douglas undoubtedly is, I do not consider it a reliable bedder, but would select one recom-

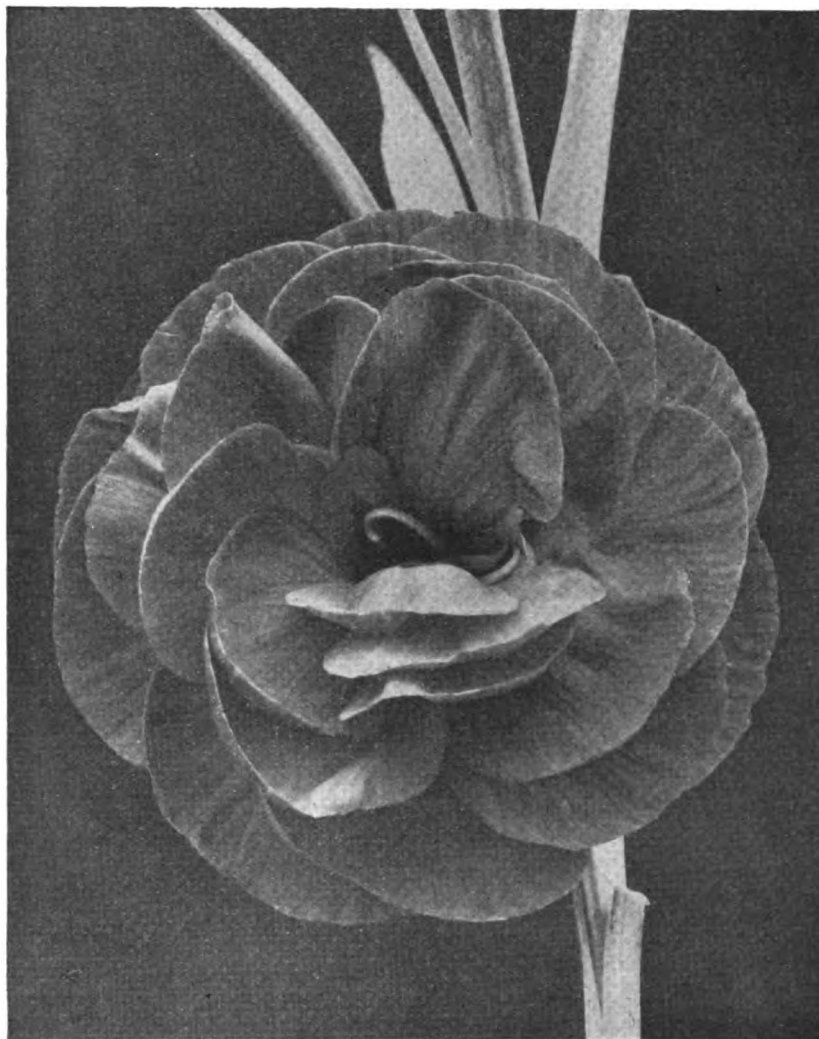


Photo A. H. Knepton

FIG. 115 CARNATION FIREMAN.

in the open border. It is strong, floriferous, and the flowers are of excellent shape. Another good sort is Crystal Clove.

Elizabeth Shifner is a sterling variety and the colour is unique, but all the deeper shades of apricot and orange are not so satisfactory. Effie Deans is really good, and the very best deep orange I have grown is Hector. It is late in blooming but very lasting, and a large flower. It is hardly suitable, however, for exhibition. Eclipse (Fig. 114) is a fine Picotee.

The scarlets are to be enriched this autumn by Bookham Scarlet, a magnificent flower of large size and good shape. We want flowers of this colour. Fujiyama, Fireman (Fig. 115), and Grenadier are the other reliable varieties generally grown and exhibited. Vesuvius is

mended as such, or the novelty, Bindle, as this is really a strong border variety.

Anyone who is fond of Picotees but hesitates to grow them in a town garden should try the yellow grounds Her Majesty, Santa Claus, Eclipse, Mrs. J. J. Keen, and Margaret Lennox. I have grown these varieties for years with very satisfactory results, and one of the strongest sorts I have is the white ground Picotee Fair Maiden, a most dainty rose, wire-edged flower. It is floriferous, well-shaped and of large size. Two others that have withstood three seasons are Radiant and Lavinia, and they all flower quite late in August. The pleasure and interest in cultivating these favourites of the old-time florists will grow with each succeeding season. *J. B. Wells.*

INDOOR PLANTS.

FUCHSIA ANDENKEN AN HEINRICH HENKEL.

For window boxes there is scarcely another *Fuchsia* that can rival this variety, unfortunately christened with the rather too long name of *Andenken an Heinrich Henkel*, abbreviated in gardens to "*Henkel*." It was put into trade by the nursery of Henkel in Darmstadt, Germany, once famous for its choice collections of aquatics, chiefly Water Lilies, and other things. It was soon distributed everywhere, and at once became a favourite wherever *Fuchsias* were grown. About the same time, numbers of hybrids between *Fuchsia triphylla* and *F. corymbiflora* were raised in Germany, and about ten years later some of these *Fuchsias* including *Henkel*, were shown on a coloured plate of *The Garden*. On my arrival in the United States, in 1923, I was pleasantly surprised to find *Henkel* in full flower among a patch of *Fuchsias* in a greenhouse of the Horticultural Department of the Cornell University at Ithaca, N.Y.

As the origin of this brilliant kind of *Fuchsia* is not known I wish to explain its history. In 1895, or just before this time, the old *Fuchsia triphylla* was introduced into Germany. Botanical Gardens and *Moeller's Deutsche Gaertner Zeitung* drew the attention of plant breeders to this species. *F. triphylla* is the type of the genus and the first *Fuchsia* known to science. It was on this species that Father Charles Plumier (1646-1706), a distinguished French botanist, who worked in the West Indies, founded the genus *Fuchsia* in 1703. It was named by him in honour of Leonhard Fuchs (1501-1565), Professor at the University of Tuebingen in Germany, and author of one of the first herbals. He was a contemporary and colleague of the famous Greek scholar, Philipp Melancthon, of the same University, the intimate friend of Martin Luther the Reformer. Plumier named his plant, which he had met with in St. Domingo, *Fuchsia triphylla flore coccinea*, and published a somewhat rude figure of it. Linnaeus, who only knew the plant from Plumier's publication, reduced the name to *F. triphylla*. But, as later on, the bulk of the species of the genus *Fuchsia* were found in South America, Plumier's plant became almost a myth, and it was even doubted whether there existed such a plant as a *Fuchsia* in the West Indies. But in 1873 Thomas Hogg, of New York, introduced seeds from St. Domingo, and thus, 170 years after the plant had been described and figured, it was introduced into cultivation. In 1882, the plant was introduced into England by Messrs. G. G. Henderson and Son, from America, and as stated above, over ten years later it was recommended by Moeller in *Erfurt* as a promising object to the plant breeder.

This suggestion was promptly taken up, but the crosses were chiefly made with *F. corymbiflora*, as is shown on the plate mentioned above. I was at that time (1896) at the Botanic Garden in Greifswald, and as I had several small specimens of *F. triphylla* I crossed the flowers of one of them with pollen of a white-flowered and long, tubular hybrid variety, the name of which was unknown. I had four fruits which I ripened during the following winter, and in spring of 1897 I handed them over to Mr. F. Rehnelt of the Botanic Garden in Giessen so that he might grow them. The seeds germinated quickly, and in June, before I left for Italy, a number of promising seedlings had come up, which were all alike. The following year, the young *Fuchsia* seedlings were planted on a flower bed in the botanic Garden at Giessen, and attracted the attention of Mr. Henkel from Darmstadt, who acquired the whole set for a small sum, and put the variety into trade under the long name given above. This is the exact history of its origin.

Fuchsia Henkel is perfectly intermediate between its parents. It shows the roundish-ovate leaves of the pollen plant, with the rich, dark-red colour of the mother plant, and the colour of the flower is changed from the hard

cinnabar of the mother parent through the white of the pollen parent to a fine, brilliant, rosy-crimson, with a slight cinnabar hue.

Like all the hybrid descendants of *F. triphylla*, *Henkel* has inherited from that species the habit of abundant and continuous flowering in long, terminal racemes. A plant which I brought from Ithaca to Geneva in October, 1923, continued flowering all the winter until late in spring in 1924, when I had to cut it down in order to get cuttings. During all this time the plant was continually in flower, always producing new flowers from the top to replace the old ones that dropped at the base. The plant has a rather drooping habit, and is therefore employed best where the flowers can hang down free and display all their graceful beauty, as in window boxes or in hanging baskets, or as standards when grafted on strong and erect growing kinds. It succeeds equally well in the cool greenhouse as in the open, and is generally at its best towards the autumn. *Alwin Berger, New York State, Agricultural Experiment Station, Geneva, New York.*

RONDELETIA.

RONDELETIA gratissima forms a bush several feet high. The terete branchlets are clothed with hard, glabrous, opposite, deep green leaves one-and-a-half inch long. It flowers freely, when quite small, bearing in autumn clusters of fragrant pink flowers whose beauty is enhanced by a dense fringe of lemon-coloured hairs choking the mouth of the corolla tube. The shoots should be pinched frequently when the plant is young, to lay the foundation of a well-balanced bushy specimen. It requires a compost of fibrous loam, peat and sand. Firm setting and careful watering are essential items in its successful cultivation.

The flowers of *R. odorata breviflora* are bright vermilion with a conspicuous orange-coloured eye. They are half-an-inch in diameter and borne in compact, round, many flowered corymbs. It is of a somewhat straggling habit, and requires to be neatly trained into shape. After flowering, the shoots should be cut back to within a few buds of the previous year's growth. Under the old name of *R. speciosa* this species was at one time extensively cultivated in plant stoves.

R. Roezlii is one of the strongest growing species of the genus, and when planted out, is a fine subject for a warm greenhouse or corridor, quickly covering a considerable wall space. The pruning necessary to keep it within bounds will favour the production of strong, wand-like growths which bear at their apices large, pyramidal trusses of white, *Bouvardia*-like flowers. *Fred W. Jeffery.*

ORCHID NOTES AND CLEANINGS.

LAELIO-CATTLEYA LUMINANT.

THE power of *Laelia tenebrosa* to receive and fix yellow and scarlet colours, when used as a parent, is well-known, a striking example in scarlet colour being Messrs. Charlesworth's *Sophro-Laelio-Cattleya Jeanette* and several successors of the same strain in which *L. tenebrosa*, although entering into the combination indirectly, acts as the agent in retaining the scarlet of the *Sophronis* ancestor. Many cases of bright yellow colour can be traced to the same base, one of the best being Messrs. Sanders' new *L.-C. Luminant* (*Lucille* × *Luminosa Rosita*), both parents having *L. tenebrosa* in their composition. The lineage combines *C. Mossiae*, *L. cinnabarina*, *L. tenebrosa* twice and *C. Dowiana*. The flower is large, attractive and fragrant, the sepals and petals bright yellow, and the lip, which shows much of *C. Dowiana*, dark claret-crimson, with many branched, golden yellow lines from the base to the centre. The tube and outside of the lip are orange-yellow.

LAELIA MONOPHYLLA, N. E. BROWN.

This charming little evergreen Orchid with its bright scarlet flowers borne singly on slender stems has flowered well, as usual, with H. T.

Pitt, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), who still retains in good health a small lot of plants imported from St. Andrew's Mountain, Jamaica, over twenty years ago. It continues in flower for a considerable time and is one of the most attractive species. It was known to science for many years, and its generic title has been variously rendered, but *Laelia monophylla*, N. E. Brown, *Gard. Chron.*, 1882, p. 782, will very properly be that used in gardens, as, considering the very dissimilar species included in the genus, *Laelia monophylla* agrees better than some others. A new genus, *Neocogniaux*, Schlechter, was founded on it with *N. monophylla* as the type. *Laelia monophylla* was re-discovered by Sir Daniel Morris in 1881, and figured in *Bot. Mag.*, 6683.

CASTASETUM LONGIFOLIUM.

MR. J. COLLIER's remarks in the *Orchid Calendar* are always seasonable and to the point, as might be expected from a cultivator of such high reputation who has constantly had large collections of Orchids, both species and hybrids, continually under his care. The note on *Catasetum*, etc. (p. 244) is a case in point, as the health and flowering of the plants turn on their being given a good resting season, and by neglecting it, collections have lost large numbers of these interesting species.

Catasetum longifolium, native of Guiana, is unique in that it is evergreen, the plants being found high up on trees; the pseudo-bulbs are furnished with long, strap-like, hard green leaves, necessarily pendulous owing to their weight. The fine spikes of flowers bear fleshy, cup-like, yellow and brown flowers. This species was a great favourite with the late Sir Trevor Lawrence, and it would be interesting to know whether there are many or any survivors of the goodly number once in gardens. *James O'Brien.*

CIRRHOPE TALUM ROTHSCILDIANUM.

THIS interesting plant is now flowering in the collection of Sir H. S. Leon, Bart., Bletchley, and has attained sufficient strength to show its great beauty. Although most of the *Cirrhopetalums* are generally considered more quaint than beautiful, this one must be regarded as both.

It is a very striking plant, perhaps more nearly allied to *C. Collettii* than to any other species, although its flowers are larger and finer in every way. It was first shown and received a F.C.C., October 15th, 1895, and was figured in *The Gardeners' Chronicle*, November 23, 1895. The flowers are large, bright crimson purple in colour, with long tails to the lateral sepals, and numerous hairy appendages on the dorsal sepal and petals. It is a desirable species and succeeds under the same treatment as is afforded to *C. ornatum*, and *C. Collettii*. *J. T. B.*

ODONTOGLOSSUM GRANDE.

THE stately beauty of this fine old species and the high state of perfection to which it has been brought in his collection, is well-shown in a noble inflorescence sent by J. McCartney, Esq., Hey House, Bolton, who writes of it "with us it does remarkably well; it is a common thing for a plant to carry spikes of six to nine flowers, and one plant had twenty-four blooms this season. There is nothing to compare with well-grown *O. grande*. If it were a new species how eager growers would be to get it!" The spike sent was eighteen inches tall and bore seven flowers, each bloom being nearly six inches across. The sepals and broader petals are glossy, chestnut-brown, with yellow bars on the sepals, and citron yellow shading on the outer third of the petals. The broad lip is sulphur-yellow with cinnamon-brown bars on the basal half.

There is a certain amount of variation in plants of different importations, the one sent being among the largest and darkest. Several forms in which the dark colour is suppressed are known, the best being the varieties *aureum* and *Pittianum*.

WALL GARDENING.

To build a rock garden is perhaps the highest of all gardening pleasures, but not every garden admits of its enjoyment. A rock garden which is obtrusive and in disharmony with its surroundings, though it may have its justification in the harbourage it gives to plants which would otherwise be difficult to grow, is in its ensemble an eyesore to the artistic. Where, however, good taste taboos the rock garden it often happens that terracing may be practised and the stone walls supporting the terraces may be made to serve admirably as an alternative to a rock garden.

The walls must, of course, be "dry," except where supporting pillars have to be introduced. They must be made of stone of pleasing colour and of durable texture, and yet capable of taking on pleasing colours as they weather. The whole art of wall gardening lies—as those who have built on any other model have learned—in packing the soil between the stones and in the rock crevices so tightly that it makes one with the soil or sub-soil against which the wall is built. This is no mason's, but a gardener's job; for the soil must be well-chosen and well-rammed. Plenty of sand, decayed leaf-mould, with loam of a more holding character, and stones and broken gritty rock make the ideal compost. The perfect way, of course, is to plant as you build; to have all the plants available and to put them in as the wall grows. This perfect method, however, requires resources and long forethought. Where buttresses are used and the terrace is of half hexagonal shape the wall will have a variety of aspects and the angles between wall and projecting buttress may be used for such plants as must have shade.

In this climate, the main face of the wall may as well face toward the south; for the advantages of sunshine outweigh the disadvantages of drought. The latter contingency may, moreover, be guarded against by a simple system of irrigation such as that practised in the wall-like rock garden of St. John's College, Oxford. Half-inch lead pipes perforated by pin holes at intervals of two-feet or so, laid on loose stones just beneath the soil on the top of the wall, with pin-holes directed downwards, will provide an insurance against drought. Where, however, irrigation is not practicable, the gardener need not fear as to results, for even in a period of drought—as for example, that of last June—established plants in walls facing south suffered little or no damage. Those planted in the previous autumn and spring were killed outright, and that contingency the wall builder must always be prepared to face.

The wall gardener, however, like the rock gardener, and indeed all gardeners, knows that the secret of success lies in one word—propagation; and therefore as an indispensable adjunct to the wall garden, there must be a small patch of sandy soil nicely hidden away in which the plant reserves are maintained and multiplied. But what is more easy? There need even be no glass available, or frames, though both are great allies. The vegetative propagation may all be done in beds of sandy soil in the open, although if he is wise the propagator who cannot spare cold frames will have a dozen or two cloches or other hand-lights as means to promote the rapid striking of cuttings. At the end of June or early in July the business of propagation is begun in good earnest, and by autumn there are relays of young, rooted plants ready to be put out to replace the lost, and extend the domain of the living, in the walls.

Over the buttresses *Muehlenbeckia complexa* forms gauze-like festoons, and along the top of the wall *Cistus* and *Berberis* and other plants of shapely habit may be employed. In the well-planted wall all manner of rock plants, as well as others, will flourish, and of them all it may be said almost without exception that they look more beautiful in that setting of grey stone than in any other. In the ground, in the verge of soil which runs along the foot of the wall, may be planted dwarf *Lavender*, or the small, bushy *Thymes*, *Thymus micans* or *T. nitida*. In summer, at intervals, the *primulinus* hybrid *Gladioli* look very beauti-

ful if aligned sparingly there. The walls themselves provide ample opportunity for the enterprising, and in the wall gardens may be seen wonderful collections of plants which ordinarily grow in beds or borders or shrubberies, each of which is like the "Hyssop which springeth out of the wall." Nearly all the *Saxifragas* except perhaps *oppositifolia* flourish, and the *Androsaces*. Of the latter some, like *A. primulinus* forms cushions a yard across. In winter as well as in summer the dark green of *Santolina viridis*, side by side with the grey-leaved *Cotton Lavender* (*S. Chamaecyparissus*), carry on the interest and beauty of the wall as do the many other grey-leaved, sub-shrubby *Achilleas* and *Artemisias*. *Polygonum vaccinaefolium* thrives and spreads, and the *Campanulas* (notably *C. muralis*) are frequently happy there. *Potentillas*, including the perfect yellow-flowered *P. arbuscula*, thrive, as do the *Onosmas*, *O. Taurica* and *O. rosea*. The white-flowered, Heath-like *Fabiana imbricata* grows into a tallish shrub increasing year by year (until a hard winter comes!), and the *Pentstemons* *P. heterophylla* and *P. Scouleri*, bring their mauve-blue flowers to perfection. House Leeks and *Sedums*, including the beautiful purple form of *Sedum spathulatum*, are of course at home in their several niches and the tender *Origanum Dictamnus*, most beautiful of plants, is a joy to behold during every day in the year save when rain dulls the brightness of its punctate, grey foliage.

Helianthemums, of course, are happy, and if pruned closely each year after flowering form the most perfect rounded bushes. There are *Aubrietias*, the *Aubretia*-like *Arabis* (*A. aubrietoides*); the close-growing *Cotoneasters* which form such delicate, green tracery; the carpeting *Thymes*, white flowered and purple, forming green or purple or grey coverings, beautiful in themselves and in contrast with the greyish stone; *Sedum* spectabile, which after a year or two loses its grossness and learns to adjust and balance itself to and in these unusual conditions; the *Heucheras* with long sprays of pink or crimson flowers; *Francoa ramosa*, white-flowered and luxuriant; the alpine *Poppy* which seeds itself, and, of course, the wall-loving *Cheiranthuses*—*C. Allionii*, *C. linifolium*, *C. mutabile*, *C. kewensis*, *C. alpinus* and the like, of which the first named stocks the garden, including the paths, with self-sown seedlings.

The list of plants which both thrive better and look handsomer when they are planted in a wall is indeed a long one, and there is this also to be taken into the account that each plant may be placed at its proper level; those whose leaves hide their beauty on their under-surface may be planted above eye-level, as well as those whose flower stalks spray out gracefully and depend. Others, like the bushy *Pentstemons*, rich in colour, may grow on a level with the eye, and so on.

It must, of course, be confessed that the wall garden like every garden, will not flourish unless the gardener takes endless trouble with it. Mice love the wall and undermine the plants; slugs not infrequently aspire to it; rains wash out the soil and the sun cracks it, so that the twin secret of rock-wall gardening is "propagate and top dress"; the latter with both trowel and rammer, for if cavities once form behind the stones between them and the retained earth, any plant with roots there must perforce suffer. One preoccupation of the gardener in these days of copious rain concerns the vertical garden far less than horizontal ones—weeds, though they adventure occasionally, are not the pests they have provided these last few years elsewhere in the garden.

As a last word to any who essay wall building, this advice may be given; build with a fair batter, and do not try to lay the stones too unevenly. As they are of motley size and shape the stones themselves will provide a sufficient irregularity. Therefore, as with the rock garden, the stony material being heterogeneous, the aim of the builder should be set them rather evenly than oddly: thus and thus only with the right degree of ununiformity of detail will general symmetry of the whole be achieved. K. O.

ALPINE GARDEN.

ACHILLEA LEWISII.

I AM writing of this plant with all reserve as to the name, as I have seen it labelled *A. King George* and a few other names, but I fancy that *A. Lewisii* is probably correct.

It is one of the choicest of the hybrids of the smaller *Yarrows* and, as it lasts a long time in flower, it is a good plant for the small rock garden. Its easy cultivation and its neat habit, combined with the attractive small, flat heads of flowers render it of high value. It is understood to be a hybrid between *A. rupestris* and *A. tomentosa*, with much the same mat-like habit, but with the neat heads of pleasing pale yellow. There can be no question of its hardiness and it soon increases at the roots, although it has not the capacity for spreading as some of the bigger *Yarrows*.

Achillea Lewisii grows best in a light, dry soil, and in exposure to full sun. A plant procured in spring will not be long establishing itself in the rock garden or front of the border. It has also been suggested as an edging plant when plentiful enough.

ANTHERICUM RAMOSUM.

SEVERAL lovely hardy flowers are included among the *Anthericums*, and some of these are of greater effect than the subject of this note, which is sometimes called *A. graminifolium*, but it has a grace all its own, while its comparatively low stature enables it to be planted in positions where the more robust species might be out of place. It is a free grower where it is happy, and, in time, forms masses of its pleasing narrow, grass-like foliage, from which rise multitudes of graceful spikes of white flowers. It is hardy, and is often found in its native regions among sub-alpine rocks, but in gardens it should be given a somewhat cool position, especially if the soil is liable to being parched by drought. I can speak from experience, having tried both hot, dry places and cool, moister ones, and the difference between the plants was vastly more favourable to the cool places, while in the other it was difficult to keep the plants alive even with occasional waterings.

Planting is generally performed in spring, but it may be done in early autumn, with a better prospect of the plants becoming sufficiently established to bloom next summer. Propagation is easily effected by division. S. Arnott.

PUBLIC PARKS AND GARDENS.

THE Glasgow Corporation Parks Committee recommend the erection of a new bandstand and enclosure, with seating accommodation for 2,000 persons, in a field to the north of the existing bandstand at Tolleross Park. The estimated cost of the work is £4,500. The ground on which it is proposed to construct the bandstand is at present utilised as an allotment area, and the Director of Parks has been instructed to arrange for the accommodation of the plot-holders in another portion of the same area.

THE Gosport Town Council proposes to acquire ten-and-a-half acres of land to the north of Stokes Bay from the War Department at a cost of £2,650 for the development of the area as a recreation ground, etc. The lay-out of the ground, etc., is estimated to cost £5,000.

THE Essex Local Government Committee has approved an application by the Hornchurch Parish Council for sanction to borrow £1,300 for the purchase of land for a recreation ground.

ESSEX Local Government Committee has approved an application by the Langdon Hills Parish Council for sanction to borrow £350 for the provision of a recreation ground.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.

Editors and Publisher.—Our correspondents would oblige by delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be written on one side ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Local News.—Correspondents will greatly oblige by sending to the Editors early intelligence of local events likely to be of interest to our readers.

ENGLISH-GROWN WALNUTS.

THE very great development of Walnut culture in California during the last twenty-five years, and the extensive literature which has appeared as a result of the close study there given to the subject, has aroused interest in this country and a desire to improve our present almost entirely haphazard cultivation of this crop. An account of the rise of the industry and of the progress achieved may be found detailed in the *Journal of Pomology and Horticultural Science*, July, 1924. The Californian output in 1889 was under 2,000 tons, in 1909 it was about 9,000 tons, and this year's careful crop estimates put it at between 26,000 and 27,000 tons of dried Walnuts. The crop is grown on a little over 100,000 acres entirely devoted to Walnut tree cultivation, but this area comprises many orchards still under bearing age.

France, where the Walnut has been cultivated from time immemorial, is a still larger producer, the crop for the ten-year period ending just before the war being 58,000 tons per annum. Italy, Spain and the countries of the Near East have also a considerable output. It is an interesting and suggestive fact that by far the major part of the French crop is the product of single, isolated trees grown in the fields, vineyards and borders of cultivated land, a relatively small proportion only being derived from Walnut orchards proper.

How far is Walnut culture a practicable proposition in this country?

It is well-known that very fine Walnut trees are to be found in many places, growing under widely differing conditions. In *Trees of Great Britain and Ireland* (Vol. II, p. 261) the late Mr. Elwes wrote:—"I can find no records or measurements of Walnuts abroad which show that it ever exceeds in warmer climates the size it attains here," and in the *Transactions of the Highland and Agricultural Society of Scotland*, 4th Series, Vol. XVI (1884) an account is given of some remarkably fine Walnut trees on the Scottish side of the border.

Over most of the country, including parts of Scotland, crops of green Walnuts, for pickling, may be gathered about the end of June and early July, but too large a part of this crop, which should be wholly home-grown, is obtained from the continent, owing to the neglect of English growers to collect the fruits systematically before they grow hard and woody. Apart from the uncertainty of the yield, in this case the

principal consideration, green Walnuts from seedling trees are at no disadvantage in market value in comparison with those from grafted stock.

But the case is very much otherwise with trees growing in the midland and southern counties where the fruit may be relied upon to ripen in a normal year. Very considerable quantities of English Walnuts are gathered in most years, but are badly handicapped against imported French and Italian nuts; in the first place, being derived almost wholly from seedling trees, they vary within the widest limits in size and character, and, secondly, with the rarest exceptions, they will not keep and must be consumed before they become dry.

The question of the possibility of radical improvement in Walnut growing generally, for fruit, was considered by the Horticultural Branch of the Ministry of Agriculture and Fisheries to be of sufficient importance for investigation, and at a conference between Mr. H. V. Taylor, Deputy Controller; Mr. R. G. Hatton, Director of the East Malling Research Station, and the writer, a preliminary programme of investigation and research was arranged in the summer of last year. The subject involved careful enquiry into the general character of the Walnuts now growing up and down the country, with the object of obtaining a closer knowledge of existing types, and the location of some of the best existing varieties with a view to the later vegetative propagation and wider distribution. It was also desired to introduce and test under English conditions good grafted trees from abroad, to grow a large number of seedlings from the best types of Walnuts with a view to the selection and propagation of such of the best as were capable of acclimatisation, and to determine, for the conditions ruling here, the most advantageous means of reproduction and most suitable stocks. As with most fruit trees, it has been proved to be hopeless to obtain any general improvement in Walnut culture except by growing budded or grafted trees. In the latter connection it may be mentioned that, in California, *Juglans californica* var. *Hindsii**, in the eastern States, *J. nigra*, and in France the common Walnut *J. regia* (and also *J. nigra* to some extent) are employed as stocks. The Walnut is dioecious, and as the staminate and pistillate flowers do not always ripen together, the question of pollination is also a factor of importance.

Through the good offices of the Inspectorate Staff of the Ministry, and of others who kindly assisted, Walnuts from some one-hundred-and-sixty trees, together with particulars relating to the latter, were forwarded to the writer in the autumn of 1924 for classification and report to the Ministry.

This report, in a somewhat abbreviated form, will appear in the next issue of the *Journal of Pomology*.

Although perhaps some half-dozen trees only gave Walnuts with the desired characteristics, in greater or less degree, i.e., high proportion of oil, a well-filled, plump kernel with but little astringency, coupled with good yield, colour, size and contour, and a well-sealed nut, the fact that they were produced at all under very adverse seasonal conditions gives excellent promise. Some of the Walnuts received were of a most attractive outline and size, and the crop yields were, in many cases, very satisfactory; weights of from one to four hundred-weights per tree were frequent and, in one instance, ten hundredweights was reported. It should, however, be borne in mind, that these weights are in the undried condition and must be reduced by about one-third to compare with imported nuts.

It is general knowledge that English-grown Walnuts are always sold and consumed in the fresh condition. Exposed for a week or two to normal indoor conditions the kernels become shrivelled and wholly worthless. Investigation of the cause of this rapid deterioration revealed the interesting fact that the shrinkage is due to shortage of the normal proportion of oil in the nut. Last year was, in some respects, unfor-

tunate, as the first year of the enquiry, as the excessive rainfall and lack of sunshine hindered normal development to a much greater extent than usual; this was confirmed from many quarters. But the important fact emerged that, even in so unfavourable a season, some Walnut trees were capable of producing nuts approximating, at least, to the high standard of Californian and Continental varieties, of retaining the well-filled, plump character and good flavour of their kernels almost as well as the foreign nut, and having an oil content close to the fifty per cent to sixty per cent. essential in the dry condition.

There is always a moderate local sale for English Walnuts, but their average small and irregular size, poor colour (due to delay in picking up from the ground and separating them from the husk), their dampness and tendency to mould, and inability to keep under ordinary conditions must, under present conditions, continue to prevent their being regarded as a serious factor in the Walnut market. Common also are excessive astringency of the thin pellicle covering the kernel, a woody flavour and excessive sugariness. Many, if not most, have a very pleasant, fresh, crisp palatability, but they lack the true, rich, creamy flavour of a good, undried Walnut—a flavour only obtained when the percentage of Walnut oil approaches the normal. Last year also, malformation and distortion of the shell was very prevalent, a failing accentuated by the wet season. Close investigation is required to determine with certainty what are the factors which will allow nuts of high quality to be grown in this country with its low average summer temperatures and sunlight energy, and how far an originally good tree is affected by soil and environment. The scope of last year's enquiry was much too limited to do more than indicate the character of typical English-grown Walnuts and the problems to be faced, but the results warrant a much wider extension this autumn. Some of the most promising counties, e.g., Somerset, Devon, Wiltshire, Berkshire and Suffolk were entirely unrepresented in the samples received, and other counties, which contributed a very few only, can undoubtedly yield varieties equal to or better than the best so far located.

The names of one or two old English varieties are given in the list of Walnuts cultivated at Chiswick in the gardens of the Horticultural Society of London (*Catalogue of Fruits*, 1826), and include the Highflyer, a Walnut which was apparently one of the best types, and which is described in more detail in the *Trans. Hort. Soc. of London*, IV., p. 517. Unfortunately, this variety appears to have died out in its native district of Thetford. It is the desire to give more than a local reputation to Walnuts of this type and to ensure that they are not lost to English horticulture that is one of the principal objects of the present enquiry. A number of identified trees of good quality from one or more aspects would also afford material for breeding improved strains fitted to produce high grade nuts even under the handicap of our climatic conditions.

The collaboration of horticulturists generally, and of others who may know of, or own, a Walnut tree having especial merit from any particular standpoint would be warmly welcomed in the investigation. It is desired to confine the examination to samples of Walnuts from definitely located trees giving nuts approximating to the standard indicated in the questionnaire issued this year by the Horticultural Branch of the Ministry of Agriculture and Fisheries of which a copy is appended. The information desired relating to the tree, even if only available in part, would be of much assistance in determining factors of importance. Copies of the questionnaire will be forwarded on request (marked "Walnut enquiry") to the Horticultural Branch of the Ministry, 10, Whitehall Place, London, S.W.1, or to the writer.

WALNUT SURVEY.

The following information should, so far as possible, be supplied:—

(1) Identification letter and number (suitably the initials of the sender and consecutive numbers) corresponding to those on the label

* And also hybrids between *J. californica* and *J. nigra*; and between either of these and *J. regia*, known as Royal and Paradox respectively.

used for despatch of the sample. (II) The name and address of owner or occupier. (III) Exact situation of tree. (IV). Approximate age of tree. (V). Height. (VI). Spread. (VII). Average annual weight of crop, and if variable from year to year. (VIII). Approximate date of flowering. (IX). Approximate date when nuts are ripe. (X). Distance from nearest other Walnut tree or trees. (XI). Local name, if any. (XII). Local opinion of quality of the nut.

The sample should consist of not less than one pound of Walnuts (after removal of husk), which should be spread in a single layer and exposed for one or two days in a cool, covered space before despatch.

Qualifications Desired.

(1). One pound weight should not contain more than fifty nuts as a maximum in the fresh condition. (2). Three-fourths of the sample (*all* of which, however, should be forwarded) should not pass through a square hole of $1\frac{1}{4}$ inch size. (3). The nuts should be well sealed and should not show separation of the two halves when pressed along the sutural ridge between the thumb and first finger. (4). The flavour of the nut must be rich (and not merely crisp and palatable) and should not be very astringent when masticated fully. (5). The nuts should be reasonably uniform in shape and not contain many which are distorted or malformed. (6). The shell should be fairly thick. (7). To preserve a good colour and avoid development of mould the nuts should be separated from the husk as soon after falling as possible.

A variety which showed any special quality of value, *e.g.*, unusually well-filled nuts, very rich flavour, attractive appearance, heavy crop, etc., but which otherwise did not conform to the desired standard, should also be forwarded for classification, with a note drawing attention to its special merit.

Samples and reports should be sent direct to me at The Red House, Ainsdale, Southport, Lancashire. *Howard Spence.*

THE ROSE GARDEN.

NEW ROSES AT THE NATIONAL ROSE SOCIETY'S AUTUMN SHOW

THE merits of a new Rose as shown at an exhibition can only be judged from a limited standpoint. The grower is enabled to display a few selected blooms to the best advantage, and, although the conditions of the Society require that a plant should be exhibited, the specimen is not necessarily a true guide as to the robustness or otherwise of the variety. Only by testing the merits of new Roses in gardens can their full garden value be determined.

In not a few cases some of the novelties at the N.R.S. Autumn Show appeared to mildew very badly, and while traces of mildew were evident, it is obvious that the exhibitors would make efforts to remove this defect so far as possible before presenting their novelties on the show board. Still, we must take into account the exceptionally wet autumn, and doubtless many Roses would be affected this year which in normal seasons would be free, or practically free, of this disfiguring complaint.

The three varieties of new Roses which received Gold Medals and the four that received Certificates of Merit were by no means the only new ones shown at the autumn exhibition in Regent's Park on the 17th ult., but probably the finest of all was Mr. Pernet-Ducher's Angèle Pernet, of which an illustration was given in *Gard. Chron.*, September 26, Fig. 98. Julia Countess of Dartry is also a beautiful Rose, both in colour and shape, whilst Margaret McGredy probably gained its high award because of its unique colouring.

Desmond Johnson (Fig. 116) is a Rose of pretty shape, especially in the young stage. The colour is a mixture of yellow and red, a considerable portion of the yellow being on the under-surface, and the upper surface is

shot with purple. This Rose appeared to us to be suitable for forcing, as the buds are of the right size and shape, and the stems long and stout, but the colour may, or may not, appeal to florists, who favour distinct colours. It looks promising for garden purposes, but here again its suitability for gardens can only be decided after trial.

Lord Fairfax is a very free-flowering variety of deep cerise-pink colour, suitable, apparently, for decorative purposes, and the flowers are

petals being flushed with crimson and orange. The older blooms assume a rich amber tint.

Arthur Cook, which received a Gold Medal at the N.R.S. Bath Show in 1924, is desirable for its fragrance alone, for it possessed more scent than any of the other new Roses, and a vase of this variety in a dwelling-room would be very delightful. The crimson-maroon colour is somewhat like that of a great many other Roses and, like most of the maroon sorts, the form is flattish when fully blown. Messrs. McGredy



FIG. 116.—ROSE DESMOND JOHNSON.

N.R.S. Certificate of Merit, September 17, Shown by Messrs. McGredy and Son.

fragrant. The expanded blooms are a little deeper pink, described by the raisers, Messrs. G. Beckwith and Son, as cherry-rose pink, and they are borne on very stiff stems. Marian Cran is a pretty H.T. variety shown by Messrs. S. McGredy and Son, but the form is nothing exceptional, and the greatest merit of this variety seems to be its profuse flowering. The colour is yellow on the under-surface and salmon-pink on the upper and both colours shown in the unfolded blooms. Doris Trayler, which had already received the N.R.S. Certificate of Merit, is a Rose of very taking colour, which the raisers describe as orange-cadmium, the outside of the

also showed Lady Florence Strong, which has received the Society's Certificate of Merit; a Rose of unique colouring, large, full, and of good shape, with pointed centres. The colour is mid-pink flushed with scarlet, with a trace of gold at the bases of the petals.

Messrs. B. R. Cant and Sons' Mrs. Beatty is a very fine yellow Rose, the colour being exceptionally clear and rich. As this had already received the Gold Medal of the Society, it was obviously exhibited for the Clay Challenge Vase offered for the best new seedling Rose of the year, but it was not successful. Last year's winner of the Clay Cup for fragrance—Bedford

Crimson—was again shown by Messrs. Laxton Bros. in even better form than before. It seems to be an ideal Rose for bedding purposes, being very free, of very rich colour and a sturdy grower. Climbing Los Angeles, shown by Messrs. A. Warner and Son, failed to attract the judges' notice, but if it is as good as the type, many will like to possess it for their gardens.

It is somewhat surprising that the beautiful Polyantha variety, Else Poulsen, shown by Messrs. D. Prior and Son, has never received recognition from the National Rose Society's Floral Committee, for it is a variety of very great merit and of a beautiful pink tone which seems quite distinct in Roses. Another Polyantha variety named F. G. Poulsen, shown by the same exhibitors, suggests a deep-coloured Tausendschon, and seemed to have considerable merit for garden purposes.

A SELECTION OF ASIATIC WILLOWS.

SUPPLEMENTARY to my notes on American Willows (see *Gard. Chron.*, vol. LXX, VII., pp. 204, 282, 397, 413, 431), I now offer a few remarks on those species of Asiatic Willows that are worth cultivating in the gardens of Great Britain and on the European Continent. During my stay in the Arnold Arboretum, I had, as already mentioned, the opportunity of making a thorough examination of the Willows of Eastern Asia and of the Himalaya. Mr. E. H. Wilson, Mr. G. Forrest, and other well-known collectors had brought together a great number of new species from Central and western China, and in 1914 Wilson sent a big collection from Japan, too, to the Arboretum. I was thus able to reinvestigate the species treated by von Seemen (*Salices Japonicae*), in 1903. From a good many of the Himalayan species described by Wallich, and later by Andersson, I have had the type specimens before me that, mostly, are preserved at the Herbarium of the Royal Gardens, Kew. The results of my investigations have been published by Sargent, *Plantae Wilsonianae*, III., 40-179 (1916). China is especially and surprisingly rich in endemic new species, among which there are quite a number of forms of great ornamental value. In Japan and in north-eastern Asia the genus *Salix* does not show such a rich development, but we find some very variable types the forms of which are still poorly known and very difficult to interpret. Of the Himalayan species we have, too, a very scanty knowledge. Some of the high alpine ones are certainly quite hardy with us, but I do not think that species like *S. Lindleyana*, *S. oreophila* or *S. Serpyllum* have ever been introduced to Great Britain.

The only Asiatic species of Willows mentioned by Mr. W. J. Bean in his standard book are *S. babylonica*, *S. Boeckii*, *S. gracilistyla*, *S. magnifica*, and *S. Pterotii*, apart of course from such species as *S. pentandra*, *S. purpurea*, *S. triandra* or *S. viminalis*, of which the true eastern forms are rarely if at all met with in our gardens.

I shall deal again with the species according to their systematic position. We still need a good systematic arrangement of the whole genus. The classification used by Andersson and even the arrangement of von Seemen are, in my opinion, too artificial. I have been obliged to propose quite a few new sections, but I think it best first to bring together the species of which a certain natural affinity is rather clearly indicated by their different taxonomical features. We should not place too much reliance in a certain character, for instance, in the presence or absence of a dorsal gland. Some sections like the *Denticulatae* and the *Longiflorae* are apparently of the closest relationship, but according to the classification of von Seemen, they would be separated rather widely because of the presence of two glands in the male flowers in the *Denticulatae*, while the species of the *Longiflorae* possess only a single gland. To propose a good classification of the whole genus one has to be fully acquainted with all the existing species. There are still some very peculiar types in China, and in

America, too, the relationship of which is quite uncertain.

At present, however, I propose to discuss the species mainly from a horticultural point of view. By introducing and cultivating them we would be able to make some valuable observations as to the constancy of their most prominent taxonomical characters. All Willows need a long and careful observation as to their variability under different conditions of soil and climate. As I shall have to explain, some of the species are extremely variable.

The first section, *Tetraspermae*, contains only sub-tropical species of which none has been introduced so far. *S. tetrasperma* seems to be widespread even in tropical parts of India; all the forms of this group still need careful study.

The second section, *Pentandrae*, includes our well-known Bay Willow which seems to be extremely rare in north-eastern Asia. Some forms rather closely related to it need further investigations. From western Szechuan, Mr. Wilson sent cuttings to the Arnold Arboretum of a species I named *S. paraplesia* that seems to be most nearly related to *S. pentandra*, and even may represent only a variety of it. I hope this plant has been distributed by the Arboretum, so that we may soon be able to observe flowering plants. The most common tree Willow of the mountains of western Hupeh and eastern Szechuan is *S. Wilsonii* which also is found in Kiang-su, Chekiang, Kweichow and Honan. Here it meets with *S. glandulosa* of which *S. Wilsonii* probably is only a variety. *S. glandulosa* is known from Shensi, Korea and Japan, and has a variety in Formosa. None of these forms has hitherto been introduced, so far as I know. They are apparently of the same horticultural value as *S. pentandra*.

When I dealt with the species of this group, I put in this section a certain new species, *S. eucalyptoides*, of which I knew only the fruiting type collected by F. N. Meyer, who in his notes had given it this name. As Nakai has shown (in *Journal of the Arn. Arb.*, vol. V, p. 72, 1924), this tree is not a true *Salix* at all, but represents a very interesting new genus, *Chosenia*. Without seeing the flowers, no one, says Nakai, would consider it distinct from *Salix*. He states that the staminate catkins are drooping, the bracts imbricated and membranaceous, and the five stamens adhere halfway to the bracts. In the female flowers the two distinct styles are subterminal and articulated at the middle. When I described the species I mistook the scar of the bract as the gland. This plant, which becomes a very fine tree, from eighty feet to fifty feet tall, with a white bark, shaggy like that of an *Eucalyptus*, ought to be introduced. According to Nakai, *Chosenia* grows very quickly, and the wood is the hardest of all known *Salicaceae* trees in Korea, and is used especially for bridge building. The tree should be quite hardy with us.

Another interesting and hardy species of this section must be the Korean *S. Maximowiczii*, with ovate-lanceolate, long-acuminate leaves measuring up to twelve cm. in length, and to 3.3 cm. in width. The fruiting aments are up to fourteen cm. long. The species is still badly known, and certainly well-worth cultivation.

Of the next section *Urbanianae*, which contains two to four very peculiar species, the two Japanese Willows, *S. Urbaniana* and *S. cardiophylla*, are certainly of greatest horticultural interest, and it seems rather strange that none of them has been so far brought to Europe or to America. According to Wilson, both grow to a greater size than any other Willow of eastern Asia. They become from 20 to 25 m. tall, and have a thick trunk from 6 to 8 m. in girth, with deeply fissured bark and massive, spreading branches, and in general appearance suggest *Populus Maximowiczii*.

The section *Triandrae* (or *Amygdalinae*) is represented in eastern Asia only by a variety of *S. amygdalina* named var. *japonica*, known from northern and central Japan and from Korea. It hardly differs from the typical Almond-leaved Willow from a horticultural standpoint. C. Schneider.

(To be continued.)

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

VIII.—AUTUMN IN THE RONG.

THE next day, September 27th, I returned to Tumbatse through a deluge of rain, the *rong* being by now an absolute bog. We were busy writing the last mail we could hope to dispatch for some time, and packing seeds. I also received a letter from the Tibetan government, asking me to send samples of seeds to Lhasa. The Dalai Lama is very fond of flowers and has beautiful gardens at his private residence a few miles outside the city. Of course, I was glad to accede to this request, in return for the welcome we had received everywhere in Tibet, and eventually sent to the capital nearly forty species of *Primula*, *Meconopsis*, *Lily*, *Gentian*, and other easily grown herbaceous plants.

On September 30 we started on our last climb to the Temo La, our most important collecting ground north of the river. The forest was now brilliant with the autumnal tints of Rowan, Maple, and Birch, and the smaller bushes—*Lonicera*, *Berberis*, *Rose*—were bright with berries. On the alpine moorland I found a small *Lonicera* growing amidst the "Lapponicum" *Rhododendron*, whose straw-yellow flowers I had merely glanced at and passed by in July, but whose fat, blue-black berries brought me to a halt, to add seed of it to the collection.

Between June and October we crossed the Temo La four times, camping there for over three weeks: in all that time we had scarcely one fine day, and now, throughout the first week of October, the weather was as bad as ever. Hailstorms and drenching rains followed one another in quick succession; some snow fell above 14,000 feet, but it soon melted. Meanwhile the work went on merrily, and we collected a lot of stuff, chiefly *Primula* and *Meconopsis*, the *Rhododendrons* being not yet ripe. One bitter disappointment we had. The Ivory Poppy of which we had found only some half-dozen plants, set practically no seed. Either this plant is really very rare, or we had never discovered its headquarters, but were only on the fringes of its domain. Of our half-dozen plants, not one set even a single capsule full of seed, and it is extremely doubtful whether we shall raise it this time.

Returning to our base for the last time, we packed up, and on October 11 bade farewell to the *rong*, where we had lived, on and off, for four months. Our objective was the Tsangpo and the Himalayan passes. So far we had collected seed only of the alpine flora on the drier ranges; we had now to collect *Rhododendron* seed chiefly, on the far richer ground of the eastern Himalaya. Whatever else we got or failed to get, we must get seeds of about a dozen priceless *Rhododendrons*, cost what it might. If we got them, the expedition was worth while, even if we got nothing else; if we failed to get them, then nothing else could compensate for the loss. We knew nothing about the conditions on Namcha Barwa, and had to guess the right moment to be there; but crossing the Nyima Pass (over 15,000 feet) before descending to the river, we could plainly see that the passes to the south were already under deep snow, so that we dared not delay. However, we spent October 12 at the Nyima La collecting some *Rhododendron* seeds, and during the long descent next day, I added to our bag. Down in the forest I found the glossy-leaved *Lonicera*, which, except for its foliage, was a miserable thing in flower, much more becoming in fruit. These fruits, borne on exceptionally long stalks, as much as three inches in length, are bright scarlet, and as big as wild Cherries.

Next day, near the river, I gathered a little seed of *Primulina pulchelloides*, and found

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, August 15, September 5, and September 19, 1925.

growing with it and now in full bloom on the dry sunny scrub-clad slopes, one of the most magnificent *Gentians* I have ever seen. It is an erect or semi-erect species, the thick root-stock, covered with fibre at the base, throwing up numerous stems from a crown of shiny leaves. These stems are eighteen to twenty-four inches long, and were now solid spires of vivid sea-blue flowers, not so dark as in *G. sino-ornata*. The plant recalls *G. asclepiadea*. *G. sino-ornata*, by the way, was also in bloom all over the *rong* country—unless this is *G. ornata*, in which case I cannot see any difference between them. With *P. pulchelloides* and the big blue *Gentian* grows the pink-flowered *Androsace*, which is something like a very large *A. spinulifera*.

Descending to the Tsangpo, we crossed by the ferry and halted at Pe. We found this insignificant village fairly humming with life, for the tribesmen were coming over from Pemako by twenties and by fifties, bringing Rice and taking back salt.

On October 15, in very soft weather, we started up the mountain for our old camping ground below the Doshong La, intending to sleep there the night, and climb to the upper meadow on the following day. We reached

I found the boggy flat carpeted with two species of *Vaccinium* whose fruit was good eating; and in a thicket by the stream I noticed a few plants of the rarest of the four scarlet

Rhododendrons grow in such startling profusion and variety, that I had a bad scare, for almost everything was buried under deep snow, and it was still snowing hard. "Yellow Peril" however, the glaucous-leaved "Souliei," stood well out, forming great banks of bluish-green against the white background; and the slender finger-like capsules of the pink "Campylogynum" were poking through the snow-drifts. But there was no sign of "Scarlet Runner," "Scarlet Pimpernel," "Carmelita," "Plum Glaucum," or other of the élite.

While poking about amongst the bushes round camp that evening I found another *Rhododendron* not seen in flower (K.W. 6229) and also the big-leaved "Lacteam" (K.W. 5718). In fact at the Doshong La one found all the *Rhododendrons* one had ever seen on the other side of the river (except the lovely rose-purple species, K.W. 5790), and some forty other species besides; and this in a narrow valley about five miles long by one deep!

During the night a gale arose, and we awoke in a snow blizzard. However, after noon the weather improved, and I went up towards the pass to examine the *Rhododendron* problem in detail. Everywhere the snow lay knee deep, and I floundered into drifts still deeper. A bitter wind hurried over the pass, sometimes bringing fine snow which clogged the air. However,

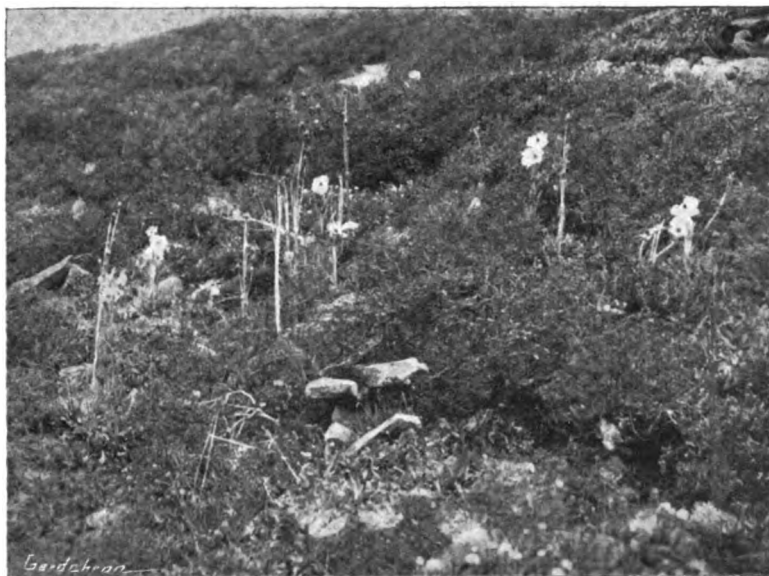


FIG. 117.—SULPHUR POPPIES AND ALPINE SCRUB.

Rhododendrons, and also spotted another species of *Rhododendron* not previously noticed. I had one very nasty fright, however. I had found here in June a small patch of the Golden *Primula*, and here it was, a mass of mucilage, nearly every seed gone! There was nothing to be done, except search round for more, and though I did find a few plants, these had lost their heads altogether, so I got no more seed that day. It was now growing late, so we returned to camp.

October 16 dawned morosely, with scuds of spray flying down the valley; a heavy mist hid the top of the "Potala"—as we named a conspicuous rock tower near the pass—and there was fresh snow on the higher slopes. But despite the gusts of cold wind, which grew fiercer as the day advanced, and almost ceaseless rain, life was never dull at the Doshong La. Autumn had set its seal on the broad-leaved trees, and flecked the dark *Abies* forest with reds and yellows. The elfin *Birch* wood, with its knotted trunks all sloping down valley, and its undergrowth of chestnut-leaved *Rodgersia*, and, where boggy, "*Sikkimensis*" *Primula*; the gneiss cliffs, crusted with an impenetrable scrub of "*Campylocarpum*" and "*Grande*" *Rhododendron* (amongst which I was presently to find a new *Triflorum*); the thickets of "*Trichocladum*" and "*Souliei*" *Rhododendron*, lining the torrent; the boggy meadow dotted with tussocks of dwarf species—"Saluense," "*Lapponicum*," and "*Anthopogon*"; all these associations offered endless interest and plenty of work. I spent the day collecting seeds, for the porters arrived so late, and the weather was so bad, that I deemed it prudent not to move camp till the morrow.

On the 17th the Tibetans turned up early, and the weather had so far improved that the sun came out and melted some of the snow, which during the night had crept down as low as the upper meadow, where we intended to camp. While the porters were slowly moving our tents up the 1,500 feet which separated us from the flat above, I made my first excursion into the alpine region, ascending the next step in a flurry of snow. On some muddy grass slides I found a large patch of the Golden *Primula*, which was not so rare here as I had at first feared, and on the other side of the pass was abundant, so that I eventually collected ample seed of it. A small, glaucous-leaved *Barberry*, with coral red berries, and a blue-berried *Lonicera* covered the rocks where the sun had already melted the snow. It was not till I reached the upper valley which leads directly to the pass, where the dwarf



FIG. 118.—THE TSANGPO, JUST ABOVE THE GORGE; SHOWING CULTIVATED LAND IN THE FOREGROUND.

the lower meadow in good time, pitched our camp, and after lunch continued the ascent to see what the upper meadow was like. It was an absolute bog. However, we found a fairly dry spot on some rising ground in the centre and marked out a camping space. It was raining steadily now, with a cold wind blowing off the pass, which was under now.



Photo Lord Cawdor.

FIG. 119.—DWARF RHODODENDRONS ON THE EASTERN HIMALAYA.

knowing whereabouts some of the best *Rhododendrons* lurked, I started digging them out; as nothing showed above the surface, this entailed a lot of work for very little result, but once I got on to a patch of the right article it was not so bad. Luckily "Scarlet Runner" kept to the summer slopes, where the rocks were steep and the snow thin; but this had melted and refrozen, forming a hard crust, and when I did find a few plants, alas! the capsules were gaping widely. F. Kingdon Ward.

NURSERY NOTES.

MESSRS. OLIVER AND HUNTER,
MONIAIVE.

AWAY up among the hills between Dumfries-shire and Galloway and near Maxwellton House, the home of Annie Laurie, Messrs. Oliver and Hunter have, within the past five years, established a nursery. This is devoted to hardy plants and is now widely-known, largely through the instrumentality of their exhibits at Chelsea, Glasgow and other leading shows, where the firm has frequently obtained high awards for their displays, which generally include rare plants, especially among Primulas and other alpine flowers.

A long deferred visit to the nursery, paid in September, proved full of interest to a hardy plantsman, especially as it gave one the opportunity of seeing a number of rare things not ordinarily met with. The nursery is situated on the slope of a hill facing south with perhaps a touch of west. The hardy flowers are not coddled in any way, and although the alpinists are mostly in pots in frames they are not covered in winter and only those susceptible to injury by much wet weather at that season have sashes placed over them to throw off the rains.

Primulas are great specialities with the firm, and many rarities are to be seen, although only a few were in bloom at the time of my visit. It would occupy too much space to detail these, but some may be mentioned. Notable were the magnificent plants of the troublesome *P. Forrestii*, which were in magnificent condition. That robust species, *P. anisodora*, was represented by a large stock of splendid plants, and as hybridising between this and other species is being practised, we may expect in the future some interesting novelties from Moniaive.

P. Juliae is well represented and two hybrids have been obtained, one with a dark Primrose and the other with a blue Primrose, and these appear distinct from the other hybrids of *P. Juliae* which have been raised. Forrest's Giant Cowslip has flowered at Moniaive to a height between three feet and four feet, and has been very fine with its yellow flowers. Its foliage is very distinct. *P. sp.*, 6094, K.W., twelve to fifteen inches, ruby, is among numerous unnamed species, such as the eighteen-inch violet *P. sp.*, 5818, K.W.; *P. sp.*, 6430 K.W., which has not yet bloomed, but appears distinct; *P. sp.*, 21983, Forrest; *P. sp.*, 6117, K.W., one foot to two-and-a-half feet, white or sulphur, apparently of the *sikkimensis* type; *P. sp.*, 5972, K.W., has not flowered here, but has small yellow flowers. There are other unnamed species. Of named species and forms there are great stocks of that grand form of *P. Littoniana* named major, with leaves almost like those of Cabbages in size, both in pots and in the open ground; a magnificent stock. *P. sikkimensis* and *P. pseudo-sikkimensis*, grown side by side, present more differences than some would be prepared to admit. *P. pinnatifida*, *P. darialeica*; the bold *P. aurantiaca*; *P. flexilipes*; a selected form of the well-known *P. x. Red Hugh*; *P. Wanda*, fine plants; *P. sino-purpurea*; *P. chrysopa*; *P. facchinii*; *P. Mooreana* Improved; a welcome hybrid of *P. Cockburniana*, and of the same colour, but perennial; *P. serratifolia*, with numerous other Chinese, Tibetan and European species and forms, are all immensely interesting.

Although Primulas are a speciality of the firm, a large and increasing stock of other alpinists is cultivated. Campanulas, both dwarf and tall, are well represented; Saxifrages, as is due to such important flowers, are largely grown, and among them I observed the rare *S. valdensis*, true, and other choice species. Sedums are well represented also; with the showy *Helianthemums*. Dianthus are extensively cultivated and among them was a good stock of the rare *D. callizonus*, while, an unexpected sight, was a good stock of *D. x. Napoleon II*, not much grown now but one of the finest of the Mule Pinks; *D. Freynii* and other good Pinks were also noted.

Heaths are greatly in demand, and practically

all the leading species and others were to be seen. The firm thinks highly of the variety of the Cornish Heath, *Erica vagans* var. *St. Keverne*, which forms an excellent Heath for autumn blooming, associated with other vagans forms. It may be noted that the Heaths at Moniaive are cultivated in loam. Among the *Omphalodes* the charming *O. Lucilia* is very successfully grown, and in a rather shaded part of a moraine by the rock garden it was spreading freely and flowering well.

Gentians are numerously grown, among those noted being the popular *G. Farreri*, *G. punctata*, and *G. lagodechiana*, with other good species. *Mimulus* Hall's Ruby is a capital hardy *Mimulus* with colour approximating to that indicated by the varietal name. An interesting novelty is *Didissandra lanuginosa*, resembling the *Ramondia* in its foliage which, however, is rather woolly and has violet and purple flowers more resembling those of the *Haberlea*. The hardness of *Oxalis adenophylla* is attested by the large stock grown in the open; and the whole collection was remarkably sturdy and healthy.

Small shrubs for rockwork are in large variety, including a number of shrubby *Veronicas*, such as the true *V. cypressoides*, *Potentilla Farreri* and an extensive variety of others. Border plants receive a full share of attention and appear to comprise the leading species and varieties in cultivation.

The two partners of the firm, Mr. Oliver and Mr. Adamson, both old Kewites, by the way, are enthusiastic plant lovers themselves, and the successes the firm have already gained is likely to be extended in the future if one may judge from their stock and the energy they display. A.

VEGETABLE GARDEN.

TURNIPS.

THE note by Mr. Copley on Turnips (p. 234) gives valuable information as regards the cropping qualities of several varieties. It would be most instructive and useful if growers would furnish particulars as to which variety of Turnip is best in their respective locality for supplying an early crop in the open.

I have found that the Early Purple Top Milan variety is excellent for this purpose provided the weather is fairly mild. Late spring frosts and low temperature during the day seem to have a particularly detrimental effect on this Turnip. The result is that growth is checked, and when warmer conditions prevail, instead of forming roots the plants "bolt" to seed.

These remarks apply to seed sown on borders in late February or early March in the south, and south midlands. Provided the weather is favourable, this Turnip has invariably been an easy first in providing roots. When the weather conditions during the spring have been bad Early White and All the Year Round have been the best. Snowball, coming in quick succession, is rather the better in cropping qualities, and perhaps in flavour. Golden Sunrise is a small Turnip, excellent for early sowing, and having exceptionally small tops, may be sown fairly thickly. It matures quickly and has the advantage of being very hardy. Orange Jelly comes into use at a much later date than the above-mentioned varieties, and, owing to the space required for its large tops to develop, is more suitable for growing in the more exposed parts of the garden. This Turnip is, however, always appreciated in the kitchen. Passing from early Turnips to the late varieties, the Purple Topped (Veitch's Strain) and Green Top Stone are two reliable varieties of excellent quality, suitable for various soils and localities. C. Ruse.

BROCCOLI.

PLANTS of Autumn Broccoli will be turning in fast in succession to the supplies of Cauliflowers still in use. Turn the leaves over the curds to protect them from slight frosts. If the weather sets in colder it is advisable to lift some of the plants and put them in deep frames for as long as required. H. Prince.

HARDY FRUIT GARDEN.

SELF-STERILITY IN MAY DUKE CHERRY.

MR. PEARSON, in his letter (*Gard. Chron.*, September 26, 1925, p. 252) states that May Duke Cherry is "given as self-sterile by experimenters," though he has seen it crop well in isolation. I should be interested to see the experimental records to which he refers. My own experience is that May Duke is *partially self-fertile*, and it is so entered in our reports (*Jour. Genetics*, VII, 1918, p. 285) and with further details (*Jour. Pomology*, III, 1923, pp. 10 and 14). It would not be very surprising if a plant which is partially self-fertile when pollinated by hand, flower by flower, were to show much greater fertility if its pollen was freely distributed by insects.

With reference to Mr. Heaton's letter (*Gard. Chron.*, p. 175) it has been shown that (*Jour. Pom.*, III, p. 5) in certain varieties of Apples the degree of self-fertility has increased with advancing years. In Plums and Cherries, however, self-sterile varieties have continued to give negative results over a period of fifteen years, e.g., the same trees of Coe's Golden Drop and Jefferson Plums, and Early Rivers' and Bigarreau Frogmore Cherries have been used successively in our experiments since 1911 up to the present time, and they have always failed to set when self-pollinated.

In collaboration with the staff at East Malling Research Station experiments have been begun with varieties worked on widely different stocks, but at the present stage the results are not ready for report. M. B. Crane, John Innes Horticultural Institution.

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. (111-116).)

(Continued from p. 252.)

ENGLAND, S.W.

CORNWALL.—The fruit crops in this district are better and heavier this year than they were last season, but, while conceding this, they are disappointingly small. The weather conditions since the autumn of 1922 have been unpropitious for fruit production. The almost complete absence of insect and fungous pests seems to be contemporary with the delightful sunshine of early summer. The fruits of late-flowering varieties of Apples as well as early sorts failed to set, and seeing that we had fine weather at that period, it seems to show that inherent weakness was the cause of the failure to set the fruit. Harry Williams, Tolcon Gardens, Redruth, Cornwall.

—The chief cause of most of the hardy fruit crops being under is due to cold, wet weather, which prevailed right up to June 1. Strawberries being the worst crop to suffer. Plum trees which are carrying heavy crops in this district are mainly planted in very sheltered positions. A. E. Meredith, Cotchele Gardens, St. Dominic.

DEVONSHIRE.—Apples, Plums and Peach trees blossomed well, but there were only a few blossoms on Pear trees. I attribute the failure of the Apple crop to the heavy rainfall on May 26, when 1.02 inch of rain fell, washing the pollen from the blossom. Small fruits were better than I expected. No rain fell here from May 29 to July 2. The soil is gravelly. Gilbert Sleep, Hartland Abbey, Hartland S.O.

SOMERSETSHIRE.—With the exception of certain varieties of Pears, all kinds of fruit trees blossomed abundantly in this district, but the crops are unsatisfactory, particularly Pears. Apples and certain Plums. The failure is not because of frosts prevailing at the time of flowering, although cold winds were in evidence at that period, but in consequence of the sunless summer of 1924. Certain sorts of Apples have

good crops, notably Worcester Pearmain, Cox's Orange Pippin, Blenheim Pippin, Victoria, Warner's King and Bramley's Seedling, but many Apple trees in orchards are without fruits. Pears are much under the average. There were good crops of Plums on some wall trees, especially Early Prolific, Pond's Seedling, and Monarch, but Gages are scarce. All kinds of bush fruits were good. Black Currants and Gooseberries were especially plentiful. Strawberries were an average crop. *James Glasheen, Hestercombe, Taunton.*

—The fruit crops, with the exception of Pears, are a very good average. Certain varieties of Apples are thinly cropped, but, taken all round, the Apple crop is a very fair one. Everything suffered from drought in early summer, although we had an exceptionally wet winter and spring up to the end of May. Strawberries were a fair crop but the berries were small and over quickly. Black Currants are always disappointing here owing to big bud. The soil is a red loam overlaying shale on a northern slope. *Grigor Roy, Halswell Park Gardens, Bridgwater.*

GLOUCESTERSHIRE.—Most crops would have been much heavier if it had not been for the severe spring and summer drought. June was practically rainless, and up to July 27, I do not think we registered an inch of rain. Apple trees particularly shed a lot of fruits in gardens and orchards. Pear trees blossomed splendidly but the fruits failed to set. Plums and Cherries suffered severely from aphides. Peaches and Nectarines dropped freely after the stoning period. Small fruits would have given very heavy crops with more rain. Raspberries have been above the average and the berries were of excellent flavour. The same is true of Strawberries. Apples and Pears have very little "scab" as compared with last year. *John Ette, 201, Henleaze Road, Westbury-on-Trym, Bristol.*

—The fruit crops are a good average with the exception of Pears. Apples are certainly better on cultivated ground than in grass orchards; Cox's Orange Pippin is exceptionally good this year on bush trees. Small bush fruits such as Gooseberries and Red Currants were excellent, but Black Currants were not quite so good owing to the spring drought and blight, which caused a lot of the berries to drop during June. The earliest Strawberries were very good, but later sorts suffered from the drought. Raspberries have done remarkably well. The soil is very strong loam and clay. *A. W. Pearce, Sudeley Castle Gardens, Winchcombe.*

—Apple trees bloomed well but the fruits failed to set, consequently we have a very poor crop of Apples. The Pear crop also is scanty, and we had but few Plums. Bush fruits were very good, also Strawberries. The soil is friable overlying the old red sandstone. *John Banting, Tortworth Gardens, Falfield.*

—At the time of flowering it looked as if there would be record fruit crops; but Pears failed to set and Plums after setting well dropped freely before the stoning period. Apples are patchy; in some places the crops being good and in others poor. Attacks of caterpillar aphids, capsid-bug and sucker have been very prevalent. Gooseberries, Red Currants and Raspberries were good, Strawberries fair, but the picking season was short owing to dry weather. The Black Currant crop was nothing like so good as that of last year owing to the berries falling. *G. H. Hollingworth, Shire Hall, Gloucester.*

HEREFORDSHIRE.—Apple trees blossomed well and conditions were ideal for a good set. I am forced to the old opinion that immature fruit buds are responsible for the wholesale falling of the Apple crop early in the season. Pear trees developed scarcely any bloom; they carried heavy crops last year. The trees are very healthy and the growth well-balanced. Strawberries were an average crop but the season was shortened by the dry weather. Black Currants ran off badly, and there were heavy

crops only where spraying was resorted to. *George H. Emmett, Hampton Court Gardens, Leominster.*

—The best cropped varieties of Apples are Bramley's Seedling, Charles Ross, James Grieve, King's Acre Pippin, Lord Grosvenor, Sturmer Pippin, Rival and Wealthy. Most other varieties are failures. Cherries, Currants, Gooseberries, Loganberries and Raspberries were good average crops. Strawberries set well, but owing to the extreme heat and drought, failed to swell their fruits. Apricots failed to set an average crop. Peaches and Nectarines were about half-a-crop. Of Pears we have scarcely any, and Plums were almost as scarce. The garden is situated on the northern slope of a hill, and well-sheltered. The soil is a deep, sandy loam. *Frederick Roberts, Stoke Edith Park Gardens, Hereford.*

SHROPSHIRE.—The fruit crops are satisfactory. I have followed the Lorette system of pruning for seven years, and for five years we have had average crops each season. The manure used consisted of farmyard manure, superphosphate of lime, with a dressing of bone manure. I also use all the soot I can obtain, and our trees, about 600 in all, are a picture of health. Our soil is of medium texture with a lime sub-soil. *A. Wardle, Loton Park Gardens, Alberbury, near Shrewsbury.*

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Erick Behnick.—Horticulture sustains a great loss in the passing of this clever German plantsman at the early age of fifty-two, and those who knew him intimately feel the loss of a friend. Behnick revered England, admired her institutions and continued to do so in spite of the unfortunate events of recent history. It was not my privilege to know him in this country, but the bond of Kew fellowship, which has helped so many gardeners of various nationalities in foreign countries drew us together during my sojourn in the German capital, and we became constant companions. I have spent many very happy evenings with him in his Curator's quarters at Dahlem, talking about Orchids and Cactaceae or playing chess. He was even more keen on Cactaceae than Orchids, and would dilate with the greatest pride on the fact that the collection for the cultivation of which he was responsible was richer in species than that at Kew. My last communication from him contains a pressing invitation to pay him a visit at Heidelberg. I had hoped one day to accept this, but now, alas! it is too late. *W. Auton.*

Floral Designs at Edinburgh International Show.—I entirely endorse the comments of your reporter on p. 237—"but why the slightly heavy but brilliantly-coloured design in Orchids arranged by Miss Gibson was entirely passed over by the judges it is difficult to understand." My opinion, as well as that of many others, was that Miss Gibson should have been awarded first prize, but judging from the awards made, the judges appear to know very little about table decorations of any kind. *J. J. Steward, Beau Manor Gardens, Woodhouse, Loughborough.*

Grapes at Edinburgh.—In the Grape class for the Thomson Challenge Trophy at Edinburgh, eight bunches of Grapes were required; I am of the opinion that if the second prize set of Grapes could carry 55½ points, the first prize set should have had more than the 58½ points awarded them, as there was certainly more than three points difference between them as regards finish. I think the judges were not over generous to the first and third prize sets, but very liberal to the second prize set. *J. J. S.*

SOCIETIES.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, SEPTEMBER 18.—*Committee present:* Messrs. A. Burns (in the chair), A. Coningsby, J. Evans, G. Giles, A. Keeling, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATE.

Odontoglossum Ardentia (ardentissimum × *Felicia*).—A model flower of good form, heavily and evenly blotched with deep maroon. The lip is large and flat. From A. HANMER, Esq.

AWARDS OF MERIT.

Odontoglossum crispum var. *Prince Arthur*.—A large white flower with one blotch on each segment. From A. HANMER, Esq.

Cattleya labiata var. *Prince of Wales*.—A pretty form, the sepals and petals being white with a coloured lip. From Capt. W. HORRIDGE.

GROUPS.

A. HANMER, Esq., Buxton (gr. Mr. G. Giles), was awarded a Silver Gilt Medal for a group in variety.

A Silver Medal was awarded to Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), for a miscellaneous exhibit of Orchids.

HELMSBURG AND GARELOCH HORTICULTURAL.

THE sixty-fourth annual exhibition of this Society, held on August 26, was one of the most successful in its history. There was a record number of entries.

In the open classes Messrs. TORRANCE AND HOPKINS staged the best collection of flowers cut from the open border, and having now won the Leonard Gold Challenge Cup for three years in succession it becomes their property. Messrs. TORRANCE AND HOPKINS were also first with six vases of early Chrysanthemums, six vases of Collette Dahlias, and were third for twelve vases of Sweet Peas. Messrs. T. SMITH AND SON gained premier honours with six vases and with twenty-four blooms of Roses, and won the Allan Silver Cup. Mr. G. BALLINGALL, Dumbarton, excelled in six Sweet Pea classes, and his vase of Powerscourt was awarded a Medal as being the best vase in the show.

The most successful exhibitors in the decorative classes were Mr. W. HOLMES, Junior, and Mr. A. HOLMES, while Mr. E. GLASS, Mr. W. F. CAMERON, and Mr. A. FERGUSON shared the honours in the fruit classes.

Vegetables were a strong feature, and the leading prize winners were Mr. T. JOHNSTONE, Mr. F. COWE, Mr. W. STEWART, and Mr. J. B. MICHIE.

Competition was strong in the amateurs' section, and the quality of the exhibits was above the average of recent years. Mr. J. BAIN won twelve first prizes in the cut flower classes, and Mr. A. McLEAN, Mr. J. McCULLUM, Mr. W. STEWART, and Mr. A. GOODLET were the most successful in the vegetable classes.

KILMALCOLM HORTICULTURAL.

AFTER the lapse of fifteen years the annual show of the above Society was revived recently when there were 360 entries. The display of cut flowers and vegetables was particularly good, and the competition in the gardeners' classes was very keen.

The chief prize winners were Major J. HALL BARRY (gr. Mr. W. Wilson), Wimborne; W. C. GRAHAM, Esq. (gr. Mr. A. Thomson), Croft-hill; Mr. A. PEDEN FIFE (gr. Mr. R. Munro), Westlands; and to LORD MACLAY (gr. Mr. A. Robertson), Duchar.

The special prize for the best exhibit in the show was awarded to W. E. GRAHAM, Esq., who also won the special prize for Sweet Peas, while Mrs. ROBERT CAMERON, Limefield, won the special prize for Roses.

Trade exhibits were staged by Messrs. AUSTIN AND McASLAN, Messrs. LEIGHTON AND CO., Messrs. KERR AND CO., Messrs. ALIX LISTER AND SON, and Mr. H. HARPER.

ROYAL HORTICULTURAL.

OCTOBER 6.—A very fine display greeted the fellows and visitors who attended at Vincent Square on this date. Michaelmas Daisies, Dahlias, Chrysanthemums, Roses and other autumn flowers were shown extensively, and there were interesting groups of Orchids. The superb exhibit of vegetables shown by the Hon. VICARY GIBBS, was the outstanding feature of the show; other notable displays were the Potatoes from Messrs. DOBBIE AND CO., and the perennial Asters and other late flowers from Mr. H. J. JONES.

Orchid Committee.

Present:—Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. H. T. Pitt, Mr. W. Flory, Mr. Fred K. Sander, Mr. H. G. Alexander, Mr. Charles H. Curtis, Mr. J. G. Shill, Mr. A. McBean, Mr. J. C. Cowan, Mr. Henry H. Smith, Mr. E. R. Ashton, Mr. J. Wilson Potter, and Mr. Arthur Dye.

FIRST-CLASS CERTIFICATE.

Laelio-Cattleya Queen Mary var. fulgens.—A beautiful variety of a very beautiful hybrid. The broad petals and sepals are clear purplish-rose, and the handsome lip is ruby-crimson, with a small yellow blotch on each side of the throat, and some gold veins. Shown by Lt.-Col. SIR GEORGE HOLFORD (gr. Mr. H. Alexander), Westonbirt, Telbury.

AWARD OF MERIT.

Cattleya Bellona var. St. Alban (Dowiana × Maggie Raphael). A charming hybrid in which the cream-coloured sepals and petals form a fine setting for the contrasting colours in the broad, frilled-edged, crimson-purple lip and its gold veinings. Shown by Messrs. SANDERS, St. Albans.

Laelio-Cattleya Pandora (C. Fabia × L.-C. Marmion). In this lovely hybrid the broad petals as well as the sepals are an exquisite shade of salmon-pink with a kind of golden sheen; the lip, reminiscent of *C. Hardyana*, is broad, ruby-crimson in front, mauve margined, and with golden sides just in front of the gold veined throat. Shown by Messrs. Cowan and Co.

GROUPS.

In the group submitted by Messrs. SANDERS the central feature consisted of several fine plants of *Vanda coerulea* carrying capital spikes of their blue flowers; *Odontoglossum Aphrodite*, varieties of the useful *Cattleya Fabia*, *C. Lady Veitch*, *Cirrhopetalum Rothschildianum*, *C. refractum*, *Dendrobium Victoria Regina*, and the sweetly scented *Cymbidium sinensis*, were also included.

Messrs. COWAN AND CO. set up a group of showy Orchids, the leading subjects being *Brasso-Cattleya British Queen*, var. *Empress*, the yellow *Cattleya Sibyl*, in several varieties; *Laelio-Cattleya Sunshine*, well-named; the white *Cattleya Vestae*; *Sophro-Laelio-Cattleya Magnet*, of large size and fine colour; and the quaint, long tailed *Masdevallia macrura*.

Messrs. BLACK AND FLORY contributed *Cattleya Lorna*, with white sepals and petals, and light purple markings around the front part of the white lip; and several forms of *Cattleya Etta* and *C. Lysander*.

Floral Committee.

Section A. *Present*:—Mr. H. B. May (in the chair), Mr. H. J. Jones, Mr. D. Ingamells, Mr. J. M. Bridgeford, Mr. Donald Allen, Mr. F. Streeter, Mr. J. B. Riding, Mr. Chas E. Pearson, Mr. Arthur Turner, Mr. W. Howe, Mr. D. B. Crane, Mr. F. Cousins and Mr. W. B. Giggell.

Section B. *Present*:—Mr. Chas. T. Musgrave, (in the chair), Mr. G. Harrow, Mr. G. Reuthe, Mr. W. J. Bean, Mr. Reginald Cory, Mr. W. G. Baker, Mr. F. G. Preston, Mr. G. Yeld, Mr. T. Hay, Mr. E. H. Wilding, Mr. R. C. Notcutt, Mr. R. D. Trotter, Mr. E. A. Bowles and Mr. James Hudson.

AWARDS OF MERIT.

Chrysanthemum Cranford Cream.—A delightful early-flowering variety, cream-coloured with deeper centre. Shown by Mr. W. ROOTS, Cranford.

Chrysanthemum Enchantress.—A compact, medium-sized early-flowering sort, with bright

pearly-pink flowers of good substance. Shown by Mr. T. BONES, Cheshunt.

Naegelia Walmsgate Beauty.—A delightful plant for the warm greenhouse. The foliage is velvety green and the tubular flowers are bright pink, yellow-throated, and carried in loose terminal spikes. Many years ago *Naegelias* were commonly grown, and perchance this newcomer may revive the interest in these useful subjects. Shown by the DIRECTOR, Royal Gardens, Kew.

Liatris scariosa alba.—A white-flowered form of a late-flowering species which, under favourable conditions, may grow so tall as five feet. Both species and variety are useful autumn flowers. Shown by Mr. AMOS PERRY, Enfield.

GROUPS.

Roses were especially well shown, the blooms were of good size and of especially clear colouring. Messrs. D. PRIOR AND SON set up an admirable collection in which the prominent varieties were Golden Emblem, Rev. F. Page Roberts, Kirsten Poulsen, Else Poulsen and the richly-coloured Lord Charlemont. Madame Butterfly, Betty Uprichard, Isobel, Sovereign, and the Rev. F. Page Roberts were particularly good in the exhibit of Messrs. B. R. CANT AND SONS. A gorgeous stand of *Mabel Morse*, of rich yellow colour, was staged by Messrs. CHAPLIN BROS., who also had large vases of *Ophelia*, Capt. H. S. Harvey Cant and *Lady Inchiquin*. In the collection of Mr. WALTER EASLEE the prominent varieties were *K. of K.*, *Etoile d'Hollande* and *Ophelia*.

Lady Inchiquin, as shown by Mr. GEORGE PRINCE, was of delightful colouring. His collection of Roses also included *Hadley*, *Mabel Morse*, *C. K. Douglas*, and *Madame Butterfly*. W. F. Dreer was shown in better form by Mr. ELISHA HICKS than we have previously seen it this season and he also staged very good blooms of *Covent Garden*, *Joanna Bridge* and *Clovelly*. Many standard varieties were staged by Messrs. R. HARKNESS AND CO., while the chief varieties shown by the Rev. J. H. PEMBERTON were *Mermaid*, *Los Angeles* and the Rev. F. Page Roberts.

Attractive collections of early-flowering Chrysanthemums were contributed by Mr. H. YANDELL, Messrs. KEITH LUXFORD AND CO., and Messrs. PUTTERIDGE, LTD. The principal varieties were *Almirante*, *Red Almirante*, *Jean Pattison*, *Pink Delight*, *October Yellow*, *Lichfield Purple*, *Betty Spark*, *Miss Mattie*, *September White*, *May Mason*, *Cranfordia*, *Knaresborough Yellow*, *Sanctity* and *Salmonea*. Carnations of good quality were shown by Mr. C. ENGELMANN, Messrs. STUART LOW AND CO., and Messrs. ALLWOOD BROS. Their varieties included *Eileen Low*, of soft pink shade; *Winsome*, a deeper pink, and *Laddie*, of rich colour. Very fresh Violets were exhibited by Mr. J. J. KETTLE, Mr. BALDWIN PINNEY, and the Misses ALLEN-BROWN.

Michaelmas Daisies were very extensively shown, and this autumn border flower provided the largest feature of the show. Mr. H. J. JONES had a magnificent collection in which he displayed a large number of excellent varieties which illustrated very skilful cultivation and artistic arrangement. His pink-coloured varieties included *Countess*, *Walkden Pink*, *Aldenhams Pink* and *Glorious*. Other very desirable sorts were *R. Von Goethe*, a large mauve flower; *White Butterfly* and *Lovely*, a dainty Aster vineous variety of pink colouring. In addition to the Michaelmas Daisies, Mr. JONES staged several generous vases of *Helianthus Monarch*, of great size and rich yellow colour.

October Dawn, of soft mauve colour; *Maid of Athens*, rich pink; *Little Boy Blue*, of compact habit and *Queen Elizabeth*, a good white, were prominent Michaelmas Daisies shown by Mr. ERNEST BALLARD.

The finest pink-flowered Michaelmas Daisy in the Hall was *Barr's Pink*, a floriferous variety, about three feet tall, and bearing very large flowers of a beautiful pink shade of colour. Messrs. BARR AND SONS also showed *Glory of Colwall*, double-mauve; *Esther*, a particularly graceful variety bearing small pink flowers; *Hilda*, of lovely colouring; *Blue Gem*, and *Sam*

Barham, a very good white. The ORPINGTON NURSERIES staged large sprays of *King of the Belgians*, *Anita Ballard*, *Harvey House* and other useful varieties.

In the centre of the hall Messrs. WATERER, SONS AND CRISP displayed hardy shrubs, amongst which several Maples showed brilliant autumnal colour. They also exhibited shapely Conifers and selected border flowers, including a valuable collection of Michaelmas Daisies.

Adjoining a good collection of Michaelmas Daisies, Mr. F. G. WOOD built a pleasant rock garden which he planted with suitable subjects. Mr. W. WELLS, jurr., showed good *Pyrethrums*, herbaceous *Phloxes*, *Rudbeckia purpurea* and Michaelmas Daisies, including *Ethel Ballard*, of soft pink colour; *Brightest and Best*, rich pink; and *Nelly's Favourite*, a deep pink variety. The Misses HOPKINS had an interesting exhibit of hardy flowers.

The Michaelmas Daisies shown by Mr. T. BONES included *Perky*, a good pink; *Ethel Ballard*, and *Blue Gem*. Messrs. RICH AND CO. showed Michaelmas Daisies, herbaceous *Phloxes* and *Roses*, while Mr. AMOS PERRY had an attractive group of *Tritomas*, Michaelmas Daisies and other seasonable hardy flowers. A neat rock garden, exhibited by Messrs. MAXWELL AND BEALE, contained appropriate plants. In a flower group, Mr. H. MARCHAM displayed a selection of Michaelmas Daisies, *Pentstemons* and *Calendula Ball's variety*. Messrs. LADHAMS, LTD., again exhibited their *Coreopsis* and *Lobelia* varieties with other border flowers.

In the Orchid annexe, Messrs. M. PRICHARD AND SONS showed *Cimicifuga simplex*, *Iris Gracchus*, I. Mrs. A. Gravy, *Cyclamen hederacifolium*, *Gentiana sino-ornata* and other valuable hardy flowers. Mr. T. CARLILE exhibited late spikes of *Delphiniums*, *Lupins*, *Tritomas* and Michaelmas Daisies. Messrs. J. CHEAL AND SONS included, in an exhibit of hardy shrubs, various *Berberis* varieties, *Desmodium penduliflorum*, *Elaeagnus* in variety, and *Kolreuteria paniculata*, of rich autumn colour.

A selection of Mair's seedling Gladioli, staged by Messrs. DOBBIE AND CO., included some very interesting spikes. Mr. A. EDWARDS also showed Gladioli.

Dahlias of particularly good quality were staged by most of the chief growers. Mr. J. B. RIDING included many excellent large-flowered decorative varieties in his valuable collection. The chief sorts were *Mabel*, of fascinating lilac shades; *Godfrey's Crimson*, *Roy Hay*, pale orange; *Noble*, deep orange; *Reg. Godfrey*, crimson; and *Bess*, orange-scarlet. He also showed very good Cactus and Colorette varieties.

The large Paony-flowered varieties were prominently shown by Mr. C. TURNER, and these included *Duncan*, maroon; *Mrs. W. Hussey*, white; *Christine*, shades of pink; and *King Albert*, rosy pink. Messrs. J. CHEAL AND SONS had a representative collection of Dahlias in which the Cactus and the useful Star varieties were prominent.

In the annexe, Mr. J. T. WEST staged a collection of Dahlias, amongst which small Paony-flowered varieties, such as *Mary*, maroon; *Lilian C. Page*, salmon; and *Radiance*, vivid crimson, were particularly good. Messrs. WM. CUTBUSH AND SON staged varieties of the decorative type of Dahlia.

Fruit and Vegetable Committee.

Present:—Messrs. C. G. A. Nix (Chairman), J. Cheal, P. C. M. Veitch, Geo. F. Tinley, S. B. Dicks, W. Giles, P. D. Tuckett, A. Bullock, H. Prince, E. Neal, F. Jordan, W. Lobjoit, W. H. Divers, E. A. Bunyard, and A. N. Rawes.

The only novelty for award was a new Apple shown by LADY HENRY, Parkwood, Henley-on-Thames (gr. Mr. E. Hewitt) of the Duchess of Oldenburg type. It is a very pretty Apple with sweet, crisp flesh, but was not considered superior to varieties already in existence.

GROUPS.

The Hon. VICARY GIBBS, Aldenham House, Elstree (gr. Mr. E. Beckett), showed a collection of vegetables equal in quality and size to the best he has staged at these exhibitions. He employed his usual light green stand with trellis background and sides, backed by dark cloth, and the use of this permitted

a number of brackets for the display of various kinds of vegetables. Mr. Beckett's exhibits of this character are noteworthy not only for the superb quality of the produce, but for the tasteful manner in which the staging is carried out. There is plenty of colour in the various kinds of vegetables, and where these are skilfully displayed it is possible to make an exhibit of this character very attractive from a spectacular point of view. The blending of the reds of Capsicums and Radish, the scarlet of the Carrots and Tomatos, the black of Fir Apple Potato, Long Black Spanish Radish and Globe Black Spanish, the white of Turnips and Radish, the rose of China Rose Radish, the dark green of Cucumbers, and lighter green of Kohl Rabi, the yellows of Golden Dawn Capsicums and Golden Tomatos, together with other shades, such as pale brown Onions, when carried out by a master hand such as Mr. Beckett's results in a group of very great beauty. The exhibit included practically everything the kitchen garden yields at this season, and we may point out as being exceptionally good:—Aubergines in pots; Onions, Record, Ailsa Craig, and Blood Red; Maltese and Holborn

ROYAL CALEDONIAN HORTICULTURAL.

THE ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on September 1. Mr. R. Fife, President, in the chair. Mr. Robert Stuart, Thornhill, Dumfries, read a paper on "The Culture of Vegetables for Exhibition."

The exhibits were: Sweet Peas from Messrs. DOBBIE AND CO., LTD. (awarded a Silver Medal); yellow Viola George M. Taylor, from Mr. JOHN DOUGLAS, Uphall (Award of Merit).

HORTICULTURAL EDUCATION ASSOCIATION.

THE Annual General Meeting of this Association, which was held on the 10th and 11th September at University College, Reading, will figure in the history of the Association as one of the most successful of these annual functions. About sixty members attended, and the visit from first till last was full of movement and replete with interest. Not only were the County Instructors in, and Superintendents

E. P. F. Sutton and Mr. Noel Sutton received on behalf of the Reading firm and afterwards acted as guides, sparing no pains to make the visit both interesting and enjoyable. The final act of courtesy was the provision of an excellent lunch by Messrs. Sutton and Sons, and then the party entered upon its concluding visit—to Messrs. Lowe and Shawyer of Uxbridge. Here the array of some 800,000 Chrysanthemums in pots, and of Roses and Perpetual Carnations in almost equally imposing numbers made a great impression. Mr. T. Stevenson personally conducted the visitors over the huge establishment and explained the working of what is, in reality, a gigantic cut-flower factory.

Mr. A. D. Turner, Horticultural Superintendent for Somerset, takes up the duties of chairman of the Association for the season 1925-6, and during his year of office Lancashire will be the venue of the annual gathering.

BERMONDSEY.

THE fifth annual Municipal Flower, Fruit and Vegetable Exhibition held in the Town Hall, Bermondsey, on the 3rd and 4th ult.



FIG. 120.—MESSRS. LAXTON BROS.' FIRST PRIZE EXHIBIT OF FRUIT AT THE R.H.S. FRUIT SHOW

(see p. 278)

Marrow Parsnips; Potatos, The Bishop and Stirling Castle; Peas, Quite Content; Maize, Country Gentleman; Cauliflowers, Prize Winner, Dwarf Mammoth and Early Emperor; and Celery Aldenham Pink and Standard Bearer.

Messrs. DOBBIE AND Co. exhibited some splendid Potatos in numerous varieties, arranging the tubers in baskets on a black ground. The quality left little to be desired, for each tuber was a shapely specimen of its kind, free from blemish and of a high exhibition standard generally.

F. C. Stoop, Esq., West Hall, Byfleet (gr. Mr. G. Carpenter), showed 100 sorts of Apples. This very excellent exhibit included a representative collection of popular sorts, and the quality was uniformly good throughout. He exhibited a new variety named George Carpenter, a very pretty fruit, coloured deep red on the sunny side, somewhat similar in colour to Rival, but more conical, after Ellison's Orange shape. Other varieties of special merit were St. Edmunds' Pippin, May Queen, Beauty of Kent, Encore, Annie Elizabeth, Christmas Pearmain, Tom Putt, Belle de Boskoop, Braddick's Nonpareil, Newton Wonder, Royal Jubilee, and William Crump.

of, Horticulture well represented, but there were several officials from the Horticultural Branch of the Ministry of Agriculture; these latter included Mr. Lobjoit and Mr. H. V. Taylor.

The visitors were received in the College on the 10th by Mr. Alfred Palmer and Sir William Mount, and during the forenoon of that day inspected the laboratories and lecture theatre of the College, together with the Assembly Hall, and the palatial Library where the gift of the late Lady Wantage is housed—the Overstone Library.

After lunch at the College, the party proceeded to Shinfield and here, under the guidance of Mr. Cobb, the gardens and glasshouses were inspected. A trial of Onions and out-door Tomatos received special attention. Prior to the annual meeting, at which domestic matters were discussed, Mr. Lobjoit addressed the gathering upon some effects of the new Allotments Bill upon allotment gardening generally, especially with regard to the influence of the Bill upon commercial gardening.

On the 11th, the party visited the extensive seed trial grounds belonging to Messrs. Sutton and Sons, both at Reading and Langley; Mr.

was an improvement on the previous exhibitions. The actual number of entries was lower than last year, this being largely due to the loss of the allotments at Fort Road, but there was a much better quality and tone throughout the exhibition.

The trade exhibits created a great deal of interest; Messrs. J. MacDonald, grass specialists of Harpenden, staged a unique exhibit and were awarded the Silver Cup (presented by Alderman Salter, M.D., M.P.). Messrs. CHAPLIN BROS., of Waltham Cross, staged a very fine exhibit of Roses and Gladioli and were awarded a Gold Medal. Messrs. F. CANT AND Co., of Colchester, also exhibited Roses and were awarded a Silver-Gilt Medal.

The SOUTH METROPOLITAN GAS Co. staged an exhibit of sulphate of ammonia and other by-products of coal, and collaborated with Messrs. HARRIS, of Ealing, in exhibiting a greenhouse suitable for the owners of very small gardens and heated by coke or gas as desired. The exhibit staged by the BOROUGH COUNCIL was also awarded a Gold Medal and was the subject of some very flattering remarks from the judges.

The children's exhibits were again an important

feature of the exhibition. The drawings, both flat, shaded and coloured, were a revelation, while the plant exhibits also showed evidence of considerable interest, attention and ingenuity.

CARDIFF AND COUNTY HORTICULTURAL.

THE thirty-first annual show of the above Society was held in the Drill Hall, Duffries Place, Cardiff, on September 16 and 17. The main building was devoted to flowers, and the annexe to vegetables and fruit. The show was opened by the Lord Mayor of Cardiff, who was supported by the Earl and Countess of Plymouth and others. Signs are not wanting that this Cardiff Show is being gradually but surely brought up to its pre-war standard, and supporters hope to see it in the near future held in more congenial surroundings such as Sophia Gardens, because the Drill Hall seems to be in the wrong part of the city to attract a large gate. The show was a great advance on that of last year, both in the number of exhibitors, and the quality of the exhibits. Like most other flower shows, trade and honorary displays constituted the principal feature, and among the latter was a delightful group from REGINALD R. CORY, Esq. (gr. Mr. J. T. Smith), The Duffryn, Cardiff. It contained two fine examples of the bronze *Cordylina australis lentiginosa*, a large number of the newer Michaelmas Daisies, such as Walkden Pink, Bees' Blush, and Little Boy Blue. There were upwards of thirty seedling Dahlias, all raised at Duffryn. *Hypericum Ascyron rubrostyla* with its lemon-yellow flowers and red stamens was most attractive, as were also *Clematis tangutica obtusicaula*, *Kniphofia setea*, coral red; *Rose Kirsten Poulsen*, *Magnolia parviflora*, with its coral fruits, and a large specimen of *Fuchsia boliviensis* with numerous, crimson, drooping flowers. A collection of Japanese pigmy trees formed a suitable edging to this remarkably well staged group, which was awarded a Gold Medal.

In the class for the most rare spray of a plant grown in the open Mr. CORY gained premier honours with *Buddleia Swallowiana*. He also staged *Escallonia montevidensis*. Another noteworthy exhibit, put up by Mr. A. J. COBB, University College, Reading, was a collection of new Dahlias.

MESSRS. WM. TRESEDER, Cardiff, staged a showy collection of Dahlias for which they were awarded a Gold Medal. They also gained first prize and a Silver Medal for a collection of hardy perennial cut flowers, and first prize and a Silver-Gilt Medal for a collection of Roses.

A pleasing diversion from the usual exhibits was a group of Cacti and Succulent plants staged by Mr. A. A. PETTIGREW, of the Cardiff Public Parks Department. Alpines and herbaceous subjects were set up by Messrs. BOWELL AND SKARRATT, Cheltenham; Mr. D. W. EVANS, Llanishen; Messrs. SKELTON AND KIRBY, Pirbright, Surrey; and Mr. STEPHEN TRESEDER, Ely.

KING'S ACRE NURSERY, Hereford, showed a representative collection of Apples, and this firm also displayed Roses, the collective exhibits being awarded a Gold Medal. Messrs. ENGELMANN, Saffron Walden, gained first prize for Carnations. Vegetables were exceptionally good; two outstanding exhibits were a collection of thirty varieties of Potatoes from Messrs. DOBBIE AND CO., Edinburgh, and a collection of Onions from Mrs. JENNER (gr. Mr. Wheeler), Wenvoe Castle, Cardiff, both of which were awarded Gold Medals.

IPSWICH AND DISTRICT GARDENERS.

ON the occasion of the autumn outing a large number of the members of this Association and their friends visited Bawdsey Manor, the residence of Sir Cuthbert Quilter, Bart., J.P. The beautiful terrace gardens were first inspected, and visits were made to the glasshouses, the vegetable garden and the rock gardens. The outing proved most pleasant and interesting and will long be a red letter day for those who attended.

Obituary.

Lem W. Bowen.—It was with deep regret that I received the following notification from Messrs. D. M. Ferry and Co., Seed Merchants, Detroit, Michigan, U.S.A.—“We announce with sorrow the death of our President, Lem W. Bowen, September 9, 1925. Mr. Bowen served this company for forty-six years. For the past seventeen years he has been its active head.” Mr. Bowen had been in failing health for some little time past, but his relatives, and many friends on both sides of the Atlantic, hoped for his recovery. For many years business brought Mr. Bowen to the Continent and to England very frequently—almost annually, and in this country he made many close friends who deeply and sincerely regret his passing. In his own country Mr. Bowen was most highly esteemed, both on account of his delightful personality and his great business qualities. Mr. Bowen had been a valued member of the National Sweet Pea Society since its very early days. Several of his sons occupy responsible positions in the important firm of Messrs. D. M. Ferry and Co., and they will continue the traditions established by their father. A. C. Bartlett.

Sir William Schlich—The distinguished arboriculturist, who died at his home at Oxford on the 28th day of September at the advanced age of eighty-five, began life as a forester, for no sooner had he taken his degree at Giessen University, in 1886, than he was appointed Assistant Keeper of the Burmese forests by the Government of India. It was a great responsibility for a man of twenty-six, fresh from a university, but responsibility was the breath of life to Schlich, and his work in the Burmese forests and in Sind, whereto he was transferred after four years in Burma, was so ably done that in 1872 he was promoted to the important post of Conservator of Forests in Bengal. The appointment of so young a man was more than justified, for Schlich soon showed himself possessed of those remarkable powers of organisation and administration allied to practical knowledge and enthusiasm which have stood him in good stead all his life. These powers were tested so severely yet so successfully, that after seven years in Bengal, Schlich was placed in charge of the forests of the Punjab. No sooner, however, was he in the saddle in that huge and difficult province, where any sort of control of the forests was resented, than Schlich was made chief of the Indian Forestry Department in succession to Dr. Brandis, who had retired. In his ten years' control of the forestry work of Bengal and the Punjab, Schlich had often felt the lack of men trained to tropical forestry, of men, in fact, to whom arboriculture was an interest as well as an object in life, and so, though it meant a complete change of life for him, it was not surprising that in 1885 Schlich should have accepted the offer of the Indian Government to organise the School of Forestry at Cooper's Hill College. Though Schlich, who at that time was, as, indeed, he afterwards remained, the trusted adviser of the Indian Government on forestry matters, left India to the keen regret alike of his official chiefs and those who served under him, the change was doubtless in the best interests of the country, for during his twenty years' tenure of office at Cooper's Hill, Schlich saw to it that men of the right type were sent out to the Indian Forestry Department. He did this to such excellent purpose that Schlich's pupils are to be found in important posts all over the Indian Empire. He exercised over them the same intangible influence for good that certain schoolmasters and tutors have exercised over their pupils through the ages, and if one sought to probe the secret of his influence, it would probably be found in his infectious enthusiasm for his subject as much as in the respect and affection the man inspired among those around him. The same influence joined to his administrative ability was doubtless at the bottom of Schlich's success as Professor of Forestry at Oxford University. When

Cooper's Hill College was closed, the Government of India sought about for fresh quarters for its Forestry School, and eventually settled at Oxford—a location not without its difficulties at the time. Chief among these difficulties was a lack of funds and a lack of enthusiasm towards forestry on the part of the mother of universities; but Oxford has never been slow to recognise talent, and after a few rigorous years, Schlich had the University as well as individual colleges on his side, and the school was firmly established. In 1911 Schlich retired from the Indian Service under the age limit, and though at that time the University funds did not permit of the endowment of a Chair of Forestry, the authorities honoured themselves and Schlich by appointing him Reader in Forestry. Though getting on in years, Schlich, with characteristic energy, set about the formation of a fund for the endowment of a Professorship of Forestry, and with the help of many friends, succeeded so well that after the war he was able to retire with the comforting assurance that a Chair of Forestry was permanently established at Oxford. Schlich's reports, of which he wrote a great number, were models of lucid conciseness, and he seldom missed a point. Of his published works, *A Manual of Forestry* is a classic, and both *Afforestation in Great Britain and Ireland* and *Forestry in the United Kingdom* are of especial interest now that forestry is receiving something of its due at home. Schlich was elected a Fellow of the Royal Society twenty years ago, and was made K.C.I.E. in 1909.

Horace J. Wright.—It is with very deep regret we have to record the untimely death of Mr. Horace J. Wright, who passed away on September 30, at Woolpit, Suffolk. Mr. Horace J. Wright was the youngest of the three sons of the late Mr. John Wright, who achieved eminence in the horticultural world as editor of the *Journal of Horticulture* and lecturer in horticulture to the Surrey County Council. In his earlier years Mr. Horace J. Wright was employed at Messrs. James Veitch and Sons' nursery at Chelsea, and he also spent a period in the *Jardin des Plantes* in Paris. Soon, however, he became associated with his father on the staff of the *Journal of Horticulture*, eventually becoming sub-editor and finally editor, until the paper ceased publication during the war. As a demonstrator and lecturer in horticulture he did much excellent work on behalf of the Surrey County Council and other bodies, and he was an unusually good judge of vegetables and fruits, in both of which he always took a special interest. In regard to flowers he made a speciality of Sweet Peas, and in this connection took part in the Bicentenary Celebration of the Introduction of the Sweet Pea into England, held at the Crystal Palace; subsequently he became one of the founders of the National Sweet Pea Society, and was its first Honorary Secretary, and, on the retirement of the late Mr. Richard Dean, he became show superintendent, and, eventually, editor of the *Sweet Pea Annual*, positions which he held for many years. On his retirement from the secretaryship he remained for several years co-editor with Mr. Chas. H. Curtis of the National Sweet Pea Society's publications. He was chairman of the Society's General Committee in 1909, and chairman of its Floral Committee when the latter body was instituted in 1907. His interest in the National Sweet Pea Society never waned, and so late as the annual meeting of 1924 he strongly advocated alterations in the personnel and conduct of the Floral Committee. He had a striking personality, was enthusiastic in all he undertook and a staunch friend, but he did not suffer fools gladly, and consequently had strong likes and dislikes. Those who knew him best, however, loved him as much for his weaknesses as for his strength of character, and they will very deeply regret his death, which came somewhat suddenly, notwithstanding that he had been in failing health for several years. We offer our deepest sympathy to his widow and son, to his sisters, and to his brothers, both of whom are well known in the horticultural world.

MARKETS.

COVENT GARDEN, Tuesday, October 10th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.; Average Wholesale Prices.
(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Erica gracilis, 48's	
cuneatum		per doz.	27 0-30 0
per doz.	10 0-13 0	—nivalis, 48's per	
—elegans ...	10 0-12 0	doz.	27 0-36 0
Aralia Sieboldii ...	9 0-10 0	Above varieties	
Araucarias, per		in 60's, per doz.	12 0-15 0
doz.	30 0-42 0	—In Thumbs, per	
Asparagus plu-		doz.	9 0-10 0
mosus ...	12 0-18 0	Marguerites, 48's	
—Sprengeri ...	12 0-18 0	per doz.	15 0-18 0
Aspidistra, green	36 0-60 0	Nephrolepis in	
Asplenium, per		variety ...	12 0-18 0
doz.	12 0-18 0	—32's ...	24 0-36 0
—32's ...	24 0-30 0	Palms, Kentia ...	30 0-48 0
—nidus ...	12 0-15 0	—60's ...	15 0-18 0
Cacti, per tray,		Pteris, in variety	10 0-15 0
—12's, 15's ...	5 0-7 0	—large 60's ...	5 0-6 0
Chrysanthemums,		—small ...	4 0-5 0
pot. grown, in		—72's per tray	
variety, 48's per		of 15's ...	2 6-3 0
doz.	18 0-24 0	Solanums, 48's per	
Crotons, per doz.	30 0-45 0	doz.	12 0-15 0
Cyrtolium ...	10 0-25 0	Viscarias, 48's	
		per doz.	15 0-18 0

Cut Flowers, etc.; Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum deco-		Gladioli, primulinus,	
rum, doz. bun.	9 0-10 0	per doz. spikes	1 6-2 6
—cuneatum, per		—scarlet, per doz.	
doz. bun.	6 0-8 0	spikes ...	3 0-4 0
Arunis (Richardias),		—Giant White,	
per doz.	6 0-8 0	per doz. spikes	2 0-3 0
Asparagus plu-		Heather, white,	
mosus, per bun.		per doz. bun.	10 0-12 0
long trails, 6's	2 0-3 0	pink, per doz.	
med. sprays ...	1 6-2 6	bun.	8 0-9 0
short ...	0 9-1 3	Honesty, per doz.	
—Sprengeri, per bun.		bun.	18 0-30 0
long sprays ...	1 6-2 0	Lapagerias, per	
med.	1 0-1 6	doz. blooms	3 6-4 0
short ...	0 4-1 0	Lilium longiflorum	
Aster Amellus		long, per doz.	4 0-4 6
King George,		—speciosum	
per doz. bun.	6 0-9 0	album, long, per	
Asters, white, per		doz.	3 6-4 0
doz. bun.	6 0-8 0	—short, per doz.	4 0-5 0
—coloured, per		—speciosum	
doz. bun.	5 0-7 0	rubrum, long,	
Bouvardia, white,		per doz. blooms	2 0-2 6
per doz. bun.	12 0-15 0	—short	1 6-2 0
Camellias, white,		Lily-of-the-Valley,	
per box, 12's	3 0-3 6	per doz. bun.	24 0-36 0
Carnations, per		Orchids, per doz.	
doz. blooms	2 6-4 0	—Cattleyas ...	36 0-48 0
Chrysanthemums		—Cypripediums	6 0-7 0
—white, per doz.		Physalis, per doz.	
blooms ...	4 0-6 0	bun.	15 0-24 0
—white, large		Roses, per doz.	
blooms, per doz.	6 0-8 0	blooms, Rich-	
—bronze, per doz.		mond ...	2 6-3 6
blooms ...	2 0-4 0	—Liberty ...	2 6-3 6
—bronze, large		—Madame Butter-	
blooms, per doz.	3 6-4 0	fly ...	2 0-3 6
—bronze, per doz.		—M me. A bel	
bun.	12 0-18 0	Chatenay ...	2 0-2 6
—yellow, per doz.		—Melody ...	2 0-3 6
blooms	4 0-6 0	—Molly Sharman	
—yellow, per doz.		Crawford ...	2 6-3 6
bun.	12 0-15 0	—Ophelia ...	2 6-3 6
—yellow, large		—Sunburst ...	2 6-3 6
blooms, per doz.	6 0-7 0	Scabiosa caucas-	
—pink, large		ica, per doz.	
blooms, per doz.	4 0-5 0	bun.	6 0-7 0
Above colours—		Smilax, per doz.	
—medium large		trails ...	3 0-3 6
blooms, per doz.	2 0 3 0	Statice, mauve ...	6 0-8 0
—spray, in bunches,		—white, per doz.	
per doz.	12 0 18 0	bun.	6 0-8 0
Coreopsis, per doz.		Stephanotis, per	
bun.	1 3-1 6	72 pips ...	4 0-5 0
Cornflowers per		Stock, English	
doz. bun.	2 6-3 0	white ...	6 0-8 0
Croton leaves		Sultan, white, per	
per doz.	0 9-2 6	doz. bun.	4 0-5 0
Fern, French, per		—mauve, per doz.	
doz. bun.	—	bun.	4 0-5 0
Gardenias, per		Violets ...	3 0-5 0
box, 12's, 18's...	5 0-6 0		

REMARKS.—Conditions of trade are similar to those of last week and supplies appear sufficient for practically all requirements. The return of mild weather has resulted in large supplies of outdoor Chrysanthemums and the prices for these flowers are on the down grade. The present weather is very unsuited to the sale of Carnations and Violets, and these vary in price according to their condition

on arrival in the market. The quantities of Violets this morning exceeded the demand, the weather being much too mild for these blooms.

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English, s. d. s. d.		Grape Fruit,	
per 1 sieve—		—Cuban ...	32 6
—Cox's ...	4 0-10 0	—South African,	
—James Grieve ...	3 0-6 0	per case ...	26 0
—Ribston Pippin	4 0-7 0	Lemons, Messina,	
—Worcester Pear-		per box ...	12 0-18 0
main ...	2 6-5 0	—Murcia ...	12 0-16 0
Apples, Cooking—		—Naples ...	26 0-30 0
—large ...	3 6-4 0	Melons (Forced)	
—others ...	1 6-2 6	—basket ...	10 0-16 0
Apples, American—		—Cantaloupes ...	3 0-8 0
—Jonathan, per		—Valencia, per	
case ...	8 0 12 0	case ...	14 0-15 0
—Cox's, per case	16 0-20 0	Nectarines, per	
—barrels ...	12 0 20 0	doz.	6 0-18 0
—York Imperial		—South African,	
barrels ...	16 0 22 0	per case ...	20 0 25 0
Apples, Nova Scotia—		Oranges, South African—	
—Gravenstein,		—Nautges per tray	3 6-5 0
barrels ...	10 0 18 0	—Naval ...	15 0-20 0
—Ribston, barrels	10 0-18 0	—Seedless ...	12 0-20 0
—Blenheim, barrels	15 0-20 0	Pines ...	3 0-5 0
—British Colum-		Peaches, English	
bian, Cox's, per case	14 0 18 0	per doz.	6 0-18 0
Bananas ...	14 0-22 6	Pears, Pitmaston,	
Blackberries—		per doz.	3 0-6 0
—cultivated, per lb.	0 6-0 8	—Fertility, per 1	
—wild, per lb.	0 3-0 4	sieve ...	6 0-8 0
Cobnuts, per lb.	0 10 0 11	—Conference ...	7 0-9 0
Figs, French, per		California—	
box ...	1 0-2 0	—Burr, Bose ...	23 0 24 0
Grapes, per lb.—		—D'Anjou ...	23 0-25 0
—Belgian, Alicante	1 0-1 6	—Nels ...	23 0-25 0
—English ...	1 3-2 0	—Comice, per 1	
—Colmar ...	1 3-3 0	case ...	16 0-18 0
—Hamburgh ...	1 3-1 9	—Keiffer, per case	10 6
—Muscat ...	2 6-4 6	Walnuts, singles,	
—Canon Hall ...	2 6-5 0	per lb.	0 4-0 6
—Guernsey ...	0 9-1 3	—Doubles, per lb.	1 0-1 6
—Lisbon White			
per case ...	10 0-14 0		
—Lisbon Black			
per case ...	12 0-15 0		

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Batavia ...	1 6-2 6	Marrows, tally ...	7 6-10 0
Beans—		Onions—	
—Scarlet Runner,		—Dutch ...	7 6-8 0
bush ...	5 0-7 0	—English, per cwt.	8 0-9 0
Beets, new, per		—Valencia ...	8 0-10 0
doz. bun.	2 0-3 0	Parsnips, per cwt.	6 0-7 0
Cabbage, per tally	7 6-12 6	Potatoes—	
Celery, per doz.		—King Edward,	
fat ...	16 0-24 0	per cwt.	6 0-7 6
Cauliflowers, per		—others ...	4 0-5 6
doz.	3 0-6 0	Sprouts, per 1 bag	6 0-8 0
Carrots, new, per		Tomatoes, English,	
bag ...	6 0-7 0	per strike—	
Cucumbers, per doz.	3 0-4 0	—pink ...	2 0-4 0
—Flata, 36's, 42's	7 6-9 6	—pink & white ...	2 0-4 0
Dutch Onions ...	8 0-9 0	—blue ...	1 6-2 6
Endive, per doz.	1 6-2 6	—Guernsey ...	1 6-2 6
Horseradish, per		—Jersey ...	1 0-2 6
bundle ...	2 0-3 6	—Dutch ...	1 6-2 6
Lettuce, Cos, doz.	1 0-2 0	Turnips, per cwt.	7 0-8 0
—cabbage ...	1 0-1 6		
Mushrooms, cups	2 0-3 6		
—Broilers ...	2 6-2 6		
—Field ...	0 9-1 0		

REMARKS.—Trade conditions continue on the slow side and except for an old day or two of brisk business, the demand is poor. Supplies of English Apples are heavy but any improvement in prices can scarcely be looked for while the quantities are so heavy from North America. A few home-grown Pears are being marketed and meeting a fair reception, considering the plenteous of Californian Pears: hothouse Grapes are not a brisk trade as supplies of Grapes are heavy from Guernsey and Holland. Other choice fruits are in steady demand. The large quantities of outdoor Tomatoes from Jersey have brought about lower values in the Tomato section. Cucumbers have shown some hardening in prices, due, perhaps, to slightly smaller quantities arriving. Mushrooms have been more plentiful and both cultivated and field Mushrooms are cheaper. Salads are plentiful and comparatively cheap; in addition to English salads available there are plenty of salads arriving from France. Walnuts are fairly cheap but Cob Nuts are scarce and dear. Some forced Beans from Guernsey are selling moderately well, but outdoor Beans are cheap. Green vegetables are plentiful. The Potato trade is steady.

GLASGOW.

Business in the cut flower market was slow during the past week and prices moved irregularly. Chrysanthemums were plentiful and cheap, especially sprays, which were offered at 2d. to 5d. per bunch for Polly, Loan's Pink and Crimson, Roi de Blanc, Wells' and Holmes' White. Disbudded blooms made the following prices: No. 1 White, 10d. to 1s. for 6's; No. 2, bronze 1s. to 1s. 4d.; Admirable, 1s. 3d. to 1s. 6d.; Delores, 1s. to 1s. 3d.; Sanctity and Framfield White, 9d. to 1s.; and Hollett Yellow, 1s. 10d. to 2s. 3d. per dozen. Large quantities of good Gladioli from Lockearnhead, consisting of L'Inmaculee, Marechal Foch, Blue Bird, White Maid, Perfection, Standard Yellow and White Giant were worth 8d. and 9d. per bunch of three spikes. Carnations were firmer at 2s. 3d. per dozen, while Madame Abel Chatenay and Madame Butterfly Roses kept steady at 2s. 6d. to 3s. Lilium values were a shade higher at 4s. to 5s. for L. longiflorum, and 2s. 6d. to 3s. for L. speciosum rubrum. Michaelmas Daisies averaged 1s. from 4d. to 6d. per bunch; Asters, 2s. per dozen

bunches; Asparagus was firm, small being worth 4d. to 6d.; medium, 8d. to 1s.; No. 1, 2s. to 2s. 6d.; and Smilax, 1s. to 1s. 6d. for 6's.

In the fruit market Apples were plentiful and cheap. Quotations per barrel:—York Imperial, 10s. to 18s.; Wealthy, 16s. to 22s.; Ganos, 10s. to 16s.; Ben Davis, 12s. to 16s.; cases:—Jonathan, 11s. to 14s.; King David, 10s. to 12s.; Wealthy, 6s. to 10s.; English:—Warner's King, 20s. to 24s. per cwt.; Grenadier, 14s. to 16s.; Lord Derby, 21s. to 24s.; Worcester Pearmain, 3s. 6d. to 5s. half barrel; Pears, Californian:—Beurre Hardy, 16s. half-case, 24s. to 26s. case; Duchesse, 14s. half-case; Eureka, 17s. to 18s.; Autumn Nells, 14s. to 16s.; Jersey:—Beurre Hardy, 8d. to 10d. per lb.; arrivals:—Scotch Alicante fetched 1s. 3d. to 1s. 6d. per lb.; Gros Colmar, 1s. 9d. to 3s.; English:—Gros Colmar, 2s. to 3s.; Alicante, 1s. 6d. to 2s.; Muscat of Alexandria, 2s. 6d. to 3s. Dutch:—Alicante, 9s. to 12s. per basket; Gros Marve, 9s. to 10s.; Guernsey:—Alicante, 8d. to 10d. per lb.; Gros Maroc, 10d. to 1s.; Appleby Towers, 9d. to 10d.; and Black Hamburgh, 7d. to 8d. Small quantities of Victoria Plums made 6d. to 1s. per lb. Burnett, 4d. and 5d., and Californian Damsons, 4s. per chip of 6d. lbs. Bronze Melons were worth from 5s. to 6s. per 24's, and yellow, 8s. to 10s.

Although late in the season the supplies of Tomatoes exceed the demand, and prices further declined to 6d. and 7d. per lb. for Scotch; 2s. 6d. to 3s. per basket for Dutch; and 2s. 6d. to 3s. 6d. for Jersey. Cauliflowers were cheaper at 2s. to 4s. per dozen. Celery sold at 1s. 6d. to 2s. per bunch; Onions at 9s. 6d. per dozen bunches; Carrots 4s. to 5s. per cwt., and washed, 7s. to 8s.; Parsley was unsaleable.

TRADE NOTE.

MESSRS. R. WALLACE AND CO., of The Old Gardens, Tunbridge Wells, will hold their annual sale of nursery stock on Tuesday and Wednesday, October 13 and 14. This event is growing in importance yearly, and the catalogue this year contains a greater variety of subjects than has previously been offered, including many new and rare Rhododendrons, Japanese Cherries, Lilies from the East, new alpine plants, and also a rare selection of Messrs. Wallace's famous Irises. The nurseries are situated just off the Frant Road to the south of Tunbridge Wells, and are well worth a visit at any time, especially at this time of the year, when many of the shrubs are showing beautiful autumn tints. The nurseries are famous for their collection of Rhododendrons, Azaleas, and Japanese Maples, and many fine specimens of these are included in the sale, and all the plants are in excellent condition. The Sale is to be conducted by the well-known auctioneers, Messrs. Protheroe and Morris, of 67-68, Cheapside, E.C., and catalogues may be obtained from them, or from the Old Gardens, Tunbridge Wells.

THE WEATHER.

EXCEPT during the closing days, calmer conditions than usual prevailed almost continuously during August, but these were accompanied by a good deal of cloud, and temperature was exceptionally equable. The air was humid and evaporation and ozone were both below their normal values. Visibility varied a good deal. No gales occurred, and the grass thermometer never fell below 40°.

The mean temperature was practically 60°, or merely three-quarters of a degree above the average. Only 154 hours of bright sunshine were recorded, implying a deficiency of twenty-six-and-a-half hours. This dullness occurred mainly in the forenoons, the sea-breezes frequently clearing the sky for the afternoons and evenings which were then very pleasant. Rain, however, fell on twenty-one days, or five more than usual; but the amounts were often small. The total precipitation at Hesketh Park was slightly over three-and-a-half inches, or almost exactly normal. At Birkdale and Ainsdale, however, the quantity measured was about two-and-three-quarter inches, or three-quarters-of-an-inch below normal. Thunder was heard on five days, but no thunderstorm of any consequence developed. A remarkable recurrence of heavy thunder-showers at the same time (around 13h. G.M.T.) on three consecutive days (the 21st, 22nd and 23rd) has, nevertheless, to be recorded. Hail fell on the third occasion. Joseph Bazantell, Borough Meteorologist, The Fernley Observatory, Southport.

GARDENING APPOINTMENTS.

Mr. L. G. Shaw, for the past nine years gardener to the late Mrs. Charles Kennet House, Harrow, as gardener to T. George Perry, Esq., Henwich House, Worcester. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. G. E. Twinn, for the past five years general foreman at Knowlesy Hall, as gardener to the Hon. Mrs. Greville, at Polesden Lacey, Dorking.

Mr. H. Prince, for the past ten years gardener to the Hon. Mrs. Greville, Polesden Lacey, Dorking, as a representative of Messrs. Sutton and Sons, in the south of England.

ANSWERS TO CORRESPONDENTS.

ASTERS DISEASED. *Mrs. H. O'H. M.* The Aster roots which you send are attacked by a species of *Fusarium*. Dryness of the roots is a common cause of this disease and infection probably occurred during the hot weather. You should remove the dead plants so soon as they are observed and burn them to prevent wholesale infection of the soil.

BEGONIAS ATTACKED BY THRIPS. *A.B.* Your Begonias are attacked by Thrips. Fumigation or spraying with nicotine compounds is commonly recommended for the control of this pest, but recent investigations have shown that the vapours of naphthalene are more effective.

BITTER PIT IN APPLES. *Pomona.* Of the three Apples sent, two showed the characteristic dark green, pitted markings of the disease known as "bitter pit." This is a physiological disease (*i.e.*, not due to any organism), and is caused by the cells of the flesh of the Apple breaking down during the ripening processes. It is seasonal in its appearance. The third Apple was soft and bruised, and developed in storage the brown rot fungus, *Monilia fructigena*.

CATERPILLAR ON APPLE TREE. *W.A.C.* The caterpillar had already pupated in transit so that it is impossible to state for certain what it is. From the description given, however, from its size, and the date of appearance, as well as the fact that it was devouring Apples, it was probably the Eyed Hawk Moth. The caterpillar of this moth is by no means uncommon amongst Apples during August. Despite its large size and the damage it causes it is not at all easy to see owing to its striped markings which tone remarkably well with its surroundings.

EDIBLE AND NON-EDIBLE FUNGI. *E. W.* There are several books dealing with this subject, the most elaborate of which is *Illustrations of British Fungi*, by M. C. Cooke. This contains 1,199 coloured illustrations but the price is somewhat prohibitive, being £30. Mr. J. Ramsbottom's *Handbook of Large British Fungi*, obtainable from the British Museum at 7/6, contains descriptions of all edible and poisonous British species of fungi, while *Nouvel Atlas de Poche des Champignons comestibles et veneneux*, by P. Dumée, in two volumes, contains 128 plates, and is obtainable from Messrs. Dulau and Co.

EARLY - FLOWERING MICHAELMAS DAISIES. *F. K. M.* For August-September flowering, two feet to three feet high, the *Amellus* varieties *bessarabica*, *Beauté Parfait*, *Beauty of Ronsdorf*, *King George*, *Perry's Favourite*, and *Rudolph Goethe* are excellent. Good *ericoides* varieties are *Ringdove*, *Delight*, *Maidenhood* and *Superbus*. *Nova Belgii* varieties—*Edna Mercia*, *Esme*, *Mrs. Perry*, *Miss Eisle*, *Maggie Perry* and *Coombe Fishacre*. *Cordifolius* varieties—*Diana* and *Photograph*. Other good kinds are *hybridus luteus*, *linosyris*, *Thompsonii*, *Winchmore Hill* var. and *ptarmicoides*. All the alpine sorts flower in June and July, and are from nine to fifteen inches tall.

FATSIA (ARALIA) JAPONICA. *A. H.* No trace of fungus could be found on the specimen received, and we do not think there is any specific disease causing the darkening and flagging of the leaf stalk. Some local conditions are evidently unsuitable for the plant.

GRAPES DISCOLOURED. *D. C. B.* The spotting of the Grapes is not due to any fungus attack; we can only suggest it may be due to "scorch" or wrong cultural treatment.

GRAPE AND PEACH. *J. W. K.* The Grape appears to be the variety named *Black Cluster*. This will grow well and ripen its fruits out of doors in most seasons in the south of England; in colder districts it would need the shelter of an unheated house. Peach mildew is the cause of the trouble on your out door Peach.

IVY DYING. *D. E. B.* Some of the dying leaves of the Ivy in various stages would have helped us to diagnose the ailment; but we do not think it could be a disease. There is no disease to which Ivy is specially liable. It may be infested with aphides, and occasionally by the caterpillars of one of the geometer or looper moths when the leaves and shoots are young. The Ivy likes a deep, rich and moist, but well-drained soil, and under these conditions it may live to be 200 to 300 years old. We are inclined to think that the roots are in soil that is liable to get too dry in such droughty seasons as 1921 and this year in June and July. If 1921 had a bad effect upon the Ivy, the present year could increase the evil. We have seen *Ampelopsis Veitchii* suffer in a similar way in both of those droughty periods, at some height from the roots. It would be worth while trying the effect of digging in a good dressing of manure this autumn, and giving the ground a good watering at intervals during June, July and August. When using paraffin, soap and water, it would be good policy to let it stand for some hours to see whether or not any free oil rises to the top. If it does so, dissolve some more soap, add it to the mixture and churn it with the syringe for five minutes to make the paraffin combine with the soap. Free oil is very injurious to leaves and bark, especially when young.

MELONS DISEASED. *H. G.* The Melon roots you submitted to us are attacked by a fungus named *Fusarium* sp. Apparently your houses became infected last year, and the infection has remained during the present season. You do not state under what conditions the Melons have been grown, but to prevent a recurrence of this disease next year you will be advised to change the soil or sterilise it. The insides of the houses should also be washed with some disinfectant, such as emulsified cresylic acid.

MELON ROOT DISEASED. *H. C.* The specimen diseased shows ample evidence of a very bad infestation of eelworm. Before fresh crops are grown in the same house the soil should be removed entirely, the house thoroughly cleansed throughout, and the walls treated with hot lime-wash to which some sulphur has been added. Seeds from Melons which may have ripened on diseased plants should not be used for a future crop.

NAMES OF FRUITS.—*I. J. K.* 1, Sturmer Pippin; 2, Northern Greening; 3, Waltham Abbey Seedling; 4 and 5, Wyken Pippin; 6, Winter Greening; 7, London Pippin; 8 and 9, Worcester Pearmain; 10 and 11, Cellini; 12, Domino. *A. B.* 1, Yellow Ingestre; 2, Alfriston; 3, Summer Golden Pippin; 4, Broad End; 5, Duke of Devonshire; 6, Allen's Everlasting; 7, King of the Pippins; 8 and 11, Gascoyne's Scarlet; 9, Cox's Orange Pippin; 10, Dutch Mignonne. *R. C.* Pear Williams's Bon Chrétien; Plum Coc's Golden Drop. *A. H. O'L.* Dutch Mignonne.

NAMES OF PLANTS. *A. G. F.* *Lycium chinense* (the Chinese Box Thorn). *P. G.* 1, *Escallonia montevidensis*; 2, *Clematis Rehderiana*; 3, *Clematis Armandii* *A. B. B.* Rose Madame Jules Bouche. *E. S. H.* 1, *Calluna vulgaris alba*; 2, *Calluna vulgaris*; 3, *Erica cinerea*. *A. M. D.* *Impatiens Roylei*. *Novice*. *Potentilla reptans*. *J. M. W.* 1, *Leycesteria formosa*; 2, *Salvia Hornum*; 3, *Armeria maritima* var. *olympica*. *Y. Z.* 1, *Calycanthus floridus*; 2, not recognised; 3, *Inula glandulosa*; 4, *Olearia Haastii*. *E. S.* *Cobaea scandens*. *A. R.* *Rubus phoenicolasius*, the Japanese Wineberry.

PRINCESS OF WALES PEACHES. *C. H.* Your fruit of Princess of Wales Peach weighing sixteen ounces is certainly a very fine one, but it is not a record weight for a Peach, as our "record" book contains an entry of a fruit of Dr. Hogg variety grown by Mr. Goodwin of Maidstone, weighing twenty-three and three-quarter ounces. You state that you had other fruits weighing twelve and fourteen ounces respectively. Unfortunately,

all the fruits were much over ripe when you packed them and they reached us in a condition of pulp, so that we were not able to state if the one was Late Admirable.

RED LEAD AND GRASS SEED. *W. McR.* Red lead is occasionally used for dressing Grass seeds before sowing, and in this case the seed is freely peppered with red lead and then the whole is rubbed together by hand. This may render the seed immune from the attacks of birds for a short time, but as it is impossible to thoroughly coat the seeds as in the case of Sweet Pea seeds, the effect soon disappears. The chief points to consider in connection with lawn Grass is to thoroughly cultivate the ground and to sow good seed liberally.

SCABIOSA CAUSASICA. *F. M. K.* The Caucasian Scabious is best planted in early spring in your district; the ground should be previously well-prepared by deep trenching and adding well-rotted manure. The most suitable soil is a deep sandy loam with good drainage. Plant in a sunny position. If the ground lies low it would be advisable to plant the Scabious on raised beds or mounds so as the better to shed superfluous moisture.

TOMATOS INFECTED WITH POTATO BLIGHT. *C. M.* Your Tomatos are infected by *Phytophthora infestans*, the cause of Potato blight. As your plants are growing in the open, the only remedy you can apply is the immediate removal and burning of all diseased fruits, leaves and stems, accompanied by spraying with Bordeaux or Burgundy mixture.

TURF INFESTED WITH INSECT PESTS. *L. R.* Neither naphthaline nor vaporite nor any product containing naphthaline will kill wireworm in turf. Old gas lime may have had some action, but modern methods of cleaning gas has made it difficult to obtain the original article. None of the old recommended substances ever killed wireworm, but merely acted as deterrents. Probably the best plan would be to try the newly introduced calcium cyanide. This is a product from U.S.A., and in preliminary trials has given good results for fumigation. It may be had from Messrs. Voss and Son, Millwall. The method is, of course, somewhat experimental, though the material has had sufficient test to warrant probably good results.

Communications Received.—*A. B.*—*M. B. C.*—*W. A.*—*G. R.*—*H. S.*—*W. T.*—*J. J.*—*B.* and *S.*—*A. B.*—*C. H.*—*F. A. A.*—*W. S.*—*G. L.*—*S.*—*E. S.*—*B.*—*J. W.*—*A. H.*—*L.*—*S. O.*—*A. F.*—*J. Y.*

CATALOGUES RECEIVED.

T. LEWIS, 45, Uxbridge Road, Hanwell, W. 7.—Rhododendrons, Azaleas, Hardy Heaths, etc.
HAMPTON PLANT CO., 12, New Malden, Surrey.—Roses, fruit trees, and hardy plants.
FRANK CANT AND CO., Braiswick Rose Gardens, Colchester.—Roses.
JAMES MACDONALD, Harpenden, Herts.—Grasses.
E. P. DIXON AND SONS, LTD., Hull.—Nursery stock.
JOHN WATERER, SONS AND CRISP, LTD., Twyford, Berks.—Rhododendrons, Azaleas, etc.; fruit trees.
G. BECKWITH AND SONS, Hoddesdon, Herts.—Roses (Wholesale).
JOHN JEFFERIES AND SON, LTD., Cirencester.—Roses.
LAXTON BROS., Bedford.—Fruit trees.
DANIELS BROS., LTD., Norwich.—Fruit trees, Roses, shrubs, etc.
D. PRIOR AND SON, LTD., The Nurseries, Colchester.—Roses.
E. W. KING AND CO., LTD., Coggeshall, Essex.—Sweet Peas.
GEO. MONRO LTD., Covent Garden, W.C.2.—Puttium for glazing.
SAMSONS LTD., 8-10 Portland Street, Kilmarnock.—Bulbs, Roses, etc.
HURST AND SON, 152, Houndsditch, E.1.—Sweet Peas, Seed Novelties (Wholesale).
UPSTONES, 35, Church Street, Rotham.—Bulbs, Roses, fruit trees.

Foreign.

V. LEMOINE AND SON, 136, Rue du Montet, Nancy, France.—Greenhouse plants.
PETER LAMBERT, Trict.—Roses.
VILMORIN-ANDRÉUX ET CIE, 4, Quai de la Mégisserie, Paris.—Seeds for autumn sowing.

SCHEDULE RECEIVED.

BRIGHTON, HOVE AND SUSSEX HORTICULTURAL SOCIETY.—Exhibition of Spring Flowers to be held in the Dome and Corn Exchange, Brighton, on April 14th and 15th, 1926. Secretary, Mr. H. J. Bingham, 128, Queen's Park Road, Brighton.

THE Gardeners' Chronicle

No. 2025.—SATURDAY, OCTOBER 17, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 49.9.

ACTUAL TEMPERATURE—

The *Gardeners' Chronicle* Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 14, 10 a.m. Bar. 31.0. Temp. 46°. Weather, Sunny.

EVERY one who gardens is aware that exuberant fruitfulness—and for the matter of that floriferousness also—carries with it the seeds of scarcity. The Beech which bears a heavy crop of seeds this year will most likely have none the next and many varieties of Apple are consistently biennial in bearing. The most obvious explanation of this sequence of abundance and scarcity is that the plant, exhausted by its flower-bearing and seed-bearing exercises, must fain rest until its strength is recuperated. Although at first sight satisfactory, this simple explanation does not seem to fit all the facts. Thus, in the case of biennially bearing Apples, it has been shown that in order to interrupt the habit it is not sufficient to thin severely this year's crop immediately the fruits are set. That practice makes little difference. In order to make next year, which should be lean, a fruitful one, the flower buds themselves must be thinned. It is hard to believe that the amount of material which is used

in converting the flowers into just-set fruits is sufficient to tax so drastically the resources of a tree as to incapacitate it altogether from flower, and fruit-bearing in the following year. Based partly on such facts as these and partly on analyses of the tissues of fruit buds and spurs is another hypothesis—that of carbohydrate-protein balance. According to it, what casts the die in favour of fruitfulness or barrenness is the ratio which subsists between the amounts of these food materials available for the nutrition and growth of each bud. It may be that this chemical hypothesis will prove correct; but at present it cannot be regarded as established. There is something to be said in favour of another hypothesis which, so far as we are aware, has not yet received attention from plant physiologists. It may be termed the toxin hypothesis; according to it floriferousness and generally, to a yet greater degree, fruitfulness, results in the formation of by-products which are of the nature of poisons. To suppose that a plant can produce substances which act deleteriously on itself might seem fantastical. Yet there are some grounds for believing that the supposition may not be groundless. It is common knowledge that the removal of the young fruits of *Rhododendron*, *Azalea* and other plants promotes the formation of flower buds. A striking illustration of this fact recently came to our notice. The well informed owner of the garden in question was called away when half-way through the work of pulling off the fruits from a large specimen of a *Rhododendron ponticum* hybrid. Now on the one side from which this year's fruits were removed every branch terminates in a plump flower bud. On the other side, which is still beset with the unplucked fruits, there is never a flower bud. It is, of course, possible that the leaves on the fruiting branches have been drained of food material to supply the developing seeds and fruits, but on the other hand it is hard to believe that they are such poor manufacturers of carbohydrates and proteins as to be unable to supply the requirements both of the cluster of fruits and of the bud which should form next year's flower truss. There are, moreover, many facts of plant-behaviour which would seem to fit in with the toxin hypothesis. Why, for example, should a flower fade so soon as it is pollinated? Why again, should an annual plant die after once setting seed? It is perhaps natural to diagnose the case as one of death from exhaustion. And in support of this diagnosis it may be admitted that if an annual be prevented from flowering it may continue to live for several years. But how may the exhaustion theory apply to the case of perennial plants which, if left alone after flowering, flower no more that year, whereas if they are cut over they resume growth and give a second crop of flowers? The cutting-over reduces the leaf surface and hence the stock of potential food-material, and yet from their restricted resources the plants contrive to produce another set of blossoms. Why, again, should herbaceous perennials die down in Autumn? It is, of course, a convenient way of escaping from winter weather—to lie dormant beneath the ground; but how is the death of the aerial parts encompassed? Is it due to a cutting off of supplies of water and food materials, or does the plant, wise after the manner of Socrates quaff from a poison cup of its own brewing? A leaf about to fall in Autumn is cut off from the plant—ostracised by the formation of an abscis layer of cork; but what causes the cork to form whereby

the leaf is outlawed from the community of members of the plant? When attacked by a parasite—Larch Canker or Shot-hole fungus, the plant forms corky barricades which may succeed in checking the advance of the invader. In these cases it would seem plausible to assume that the formation of cork is a reaction to the stimulus of some toxin excreted by the parasite. If so, may not the natural autumnal cutting off of leaves be due also to toxic action? At present none may say and every leaf which flutters to the ground carries with it a mystery.

Bedding Roses at Kew.—Visitors to Kew have now an opportunity, in the new Rose garden on the south side of the Palm House, of seeing and comparing the merits of a large and representative collection of hybrid Tea and Pernetiana varieties, also a goodly number of Hybrid Perpetuals, Teas and Hybrid Muskas. With a garden of considerable area devoted to Roses, as at Kew, it is possible to cultivate a large number of varieties, and still have only one variety in a bed. The display has proved a source of interest and attraction to thousands of visitors for fully three months. It is doubtful if some of the varieties have looked better than during the gloriously sunny afternoons of early October. Certainly the blooms of many were richer in colour than usual. With over one hundred varieties from which to choose it is not easy to make a small selection. At the time of writing the outstanding sorts include K. of K., Madame Butterfly, Los Angeles, Dorothy Page Roberts, Joanna Bridge, Vanity Fair, Ethel Somerset, Adjutant, Christine, Betty Uprichard, Miss C. E. Van Rossem, Ophelia, Gustave Regis, Vera Makay, Sovereign, Souvenir de Claudius Pernet, Mrs. Henry Morse, Mrs. Wemyss Quin, Lady Pirrie and last, but not least, the old favourite Madame Abel Chatenay.

Legacies to Gardeners.—The late Mr. Theodore Henry Gould, of the Wilderness, Maidenhead, who died on July 6 last, bequeathed the sum of £200 to his gardener, Mr. T. Appleton, and £100 to his under-gardener, Mr. John Hodges.

Potatoes.—The Potato crops have improved considerably during the growing weather of the past two months, and the yield per acre over the whole country is now forecasted at six tons, or practically the ten years' average. Lifting had not made much progress before the end of September, this work having been delayed by the showery weather, whilst in some parts of the country the crops are not yet ripe. In the Fen districts about a quarter to half of the crop had been lifted at the end of the month, but conditions had not been very favourable for this work. There is not much disease on the whole, but a little second growth is reported. In some parts of Lincolnshire the tubers are small, and in the north-eastern division generally the yields are expected to be appreciably under average, but in other parts of the country yields promise to be average or rather above, with heavy crops in South Wales.

Effect of Smoke on Horticulture.—The fourteenth annual conference of the British Commercial Gas Association is to be held in Plymouth on Monday, Tuesday and Wednesday, October 19, 20 and 21, under the presidency of Mr. J. H. Ellis, Town Clerk of Plymouth. The conference will open with a reception by the Mayor at which Dr. C. W. Saleeby, F.R.S. (Edin.), will lecture on "Sunlight and Health," while at the public conference on the concluding day the speakers will include Professor J. W. Cobb, C.B.E., Pro Vice-Chancellor of Leeds University, on "The Conservation of our Coal Resources," and Dr. R. Veitch Clark, Medical Officer of Health to the City of Manchester, on "The Conservation of the Nation's Human Energy with Special Reference to the Smoke Curse." The effect of smoke on agriculture and horticulture will also be a subject for discussion.

Allotments.—According to the Ministry of Agriculture the number of allotments in the country at the end of 1924 was estimated to be 1,170,000, covering an area of 168,500 acres, which is slightly below that of 1923, when the number was 1,190,000, occupying 170,000 acres. The Allotments Act, 1925, which received the Royal Assent on August 7, introduces several new features in the law relating to allotments. In considering town-planning schemes, borough councils and urban district councils are required to take into consideration from time to time, at least once a year, the question of land needed for allotments, and such authorities are not now required to make allotment schemes self-supporting, but may incur expenses not exceeding a rate of 1d. in the £, under the provision of the various Acts, and furthermore, borough or urban authorities may acquire land for allotments in advance of actual needs, under certain conditions. The new Act also provides that a local authority, having once purchased land for allotments, shall not sell, appropriate the use or dispose of the land for any other purpose without the consent of the Ministry of Agriculture after consultation with the Ministry of Health. The Ministry has urged councils of urban areas to do everything that lies in their power to extend the area used for allotments so far as may be necessary fully to meet the demand, and thereby to encourage and foster a movement which has a definite social and economic value, and of which the benefits are not confined to those who actually take part in the cultivation of allotments.

Ashridge Park.—There is a fear that the beautiful private estate of Ashridge Park, Berkhamstead, Hertfordshire, the seat of the late Earl Brownlow, may fall into the hands of speculative builders, but there is a hope that the National Trust may endeavour to purchase at least a part of the estate for the enjoyment of the public. During his lifetime, Earl Brownlow allowed the public access to the park, when the displays of Rhododendrons and Azaleas were greatly enjoyed and admired.

Gunnery Park.—Both the Ealing Town Council and the Acton Town Council have accepted the terms of the Ministry of Health in regard to the purchase of Gunnery Park. Under the present scheme some 100 acres will be devoted to sports, 86½ acres for recreation grounds, and 13½ acres for building purposes. The purchase money has been divided as to £51,070 for Ealing, and £45,342 for Acton. Although practically the whole of the estate is in Brentford, where there is a great shortage of land for building, none of the 13½ acres will go to that town, but will be entirely at the disposal of Acton and Ealing, and it is expected that the purchase money for the building sites will go a considerable way toward the expenses of buying the whole estate. The proposal of the Regional Town Planning Conference for Middlesex to construct a road across the park to join the Great West Road, now completed, with the North Circular Road, has not met with the approval of the Ministry of Health. As an alternative it is suggested that the widening of Gunnery Lane would serve to join the two main roads.

Prof. H. Maxwell Lefroy.—It was with deep regret that the many friends of Professor H. Maxwell Lefroy learned that the famous entomologist was overcome by gas fumes on Saturday, October 10, when experimenting in his laboratory at the Imperial College of Science and Technology, South Kensington. Professor Lefroy was engaged in research work with poisonous gases likely to be useful in the extermination of insect pests, but apparently was so absorbed in his work that he did not fully appreciate the effect of these gases on the human body. Professor Lefroy was taken to St. George's Hospital, where, in spite of the devoted efforts of the staff, he failed to regain consciousness, and just as we were going to press the sad news reached us that he had passed away. We hope to publish an account of his work in our issue of October 24.

Mr. Ernest M. Bear.—One of our most valued correspondents is Mr. Ernest M. Bear, of Magham Down, Hailsham, who after leaving school became a student in the Royal Horticultural Society's gardens at Chiswick, where he made a special study of fruits and their cultivation. In the year 1900 he left Chiswick to assist his father, the late Mr. W. E. Bear—one of the best known agricultural journalists of his day—in the planting of a fruit farm at Hailsham. Here he remained for three years, taking part in every kind of work connected with fruit farming, and adding to his knowledge and experience by visiting fruit farms in various parts of the country. Inheriting his father's facile pen, Mr. E. M. Bear turned his attention to horticultural and agricultural journalism, and spent the greater part of ten years as assistant to Mr. T. W. Sanders, the editor of *Amateur Gardening*, who was then also editor of a paper devoted to agricultural interests. During this period, however, Mr. E. M. Bear kept in close touch with the work on his father's fruit farm, and engaged therein as opportunity served. In 1913, he returned to assist his father in the



MR. E. M. BEAR.

now rapidly developing business at Hailsham, and except for an interval of active service during the war period, he has remained in direct association with the fruit producing industry. Eventually, in 1918, on the death of his father, he took over the management of the fruit farm at Magham Down, and also succeeded his father as the contributor of our monthly article on "The Market Fruit Garden." Mr. E. M. Bear is always experimenting in planting, manuring, packing and marketing, and the results of his experiments and experience, no matter whether the results are good or bad, he places before our readers in an informing manner that has won high praise from fruit farmers and gardeners alike. Mr. E. M. Bear displays an unusual and refreshing keenness in all he undertakes, and this leads him to attempt the discovery of a reason for all the problems that arise on a fruit farm and makes his literary contributions so eminently useful.

Sugar Beet Lifting Machines.—A trial of Sugar Beet root lifters was held on the estate of Home Grown Sugar, Ltd., at Kelham, near Newick, on the 13th inst., under the auspices of the Royal Agricultural Society. There were two types of exhibits, those machines which top and lift the roots and separate them from the leaves and crowns, and those which loosen the roots, allowing them to be subsequently lifted and topped by hand. Only one entry was forthcoming in the first class, and this did not meet with the approval of the judges.

In the other competition there were five pairs of horse-drawn lifters, two with centre lifters and three with side lifters. This type of machine is stated to resemble a miniature plough, and is capable of lifting two acres per day. The first prize was awarded to Messrs. Cook and Sons, Lincoln, and the second to Messrs. Stevenson and Sons, Ltd., Newick. Messrs. Fowlers Leeds, showed a capable Beet lifter by which ten rows can be lifted with one passage of the implement and for this a special prize was awarded.

Summer-time Victory Luncheon.—At the summer-time victory luncheon under the auspices of the Early Closing Association held at the Holborn Restaurant on the 15th inst. to celebrate the placing of the Summer-time Bill on the Statute Book, horticultural interests were represented by Sir Edmund Freemantle (Metropolitan Public Gardens Association) and Dame Beatrix Lyall (L.C.C. Parks Committee). The president of the Association, Mr. Churchill, presided, and he was supported by an influential gathering including the former secretary, Sir William Joynson-Hicks; Sir Herbert Samuel, who introduced the original Bill in 1916; Sir Henry Norman, who negotiated with the British and French Governments in 1916; Sir Kingsley Wood, M.P., who secured the second reading of the E.C.A.'s Bill in 1925; and Lt.-Col. A. Lambert Ward, M.P., who carried the Bill through in the last Session.

Devil's Dyke, Brighton.—At the instance of the National Trust and Commons and Footpaths Preservation Society, supported by the Brighton Corporation, the Department of Ancient Monuments of the Office of Works has scheduled the Devil's Dyke, Brighton, for protection under the Ancient Monuments Act. The part scheduled comprises the famous earthworks of the old Roman camp, the Devil's Dyke and the Devil's Grave. Under the Act mentioned the owner of an area so scheduled must give to the Commissioner of Works one month's notice of intention "to demolish or remove, in whole or in part, structurally alter, or make additions to the monument." On receiving such notice the Commissioners may at once issue a Preservation Order if they are of opinion that the protection of such a monument is of national importance. An owner who ignores the act of scheduling is liable to a fine of £100 in addition to three months' imprisonment.

Deepdene Chestnuts.—There is every hope that these famous old Chestnuts will be saved as the Highway and Purchase Committee of the Surrey County Council have considered a modification of the original road construction plans which would cause no serious interference with the avenue of Chestnuts. Already some of the trees in the park have been felled and some alarm was felt locally that the Chestnuts were included. Definite instructions, however, have been issued that none of these trees shall be felled pending the decision of the Surrey County Council.

Linnean Society's Meetings.—General meetings of members of the Linnean Society for the 1925-26 session will be held at Burlington House, Piccadilly, W.1., on November 5 and 19; December 3 and 17, 1925; January 7 and 21; February 4 and 18; March 4 and 18; April 15; May 6; anniversary meeting, May 27; and June 10, 1926. At the meeting to be held on November 5, Dr. H. S. Holden and Mr. H. S. Clark will discuss the Seedling Structure of the European Lime, *Tilia europaea*.

Celery Diseases.—Mr. Stirrup, M.Sc., Adviser in Plant diseases to the Midland Agricultural and Dairy College, gave some interesting particulars at a Conference held at the College of investigations he is conducting in Celery diseases, which are causing very considerable failures amongst the growers in the districts of north Lincolnshire. Both the seedling and the adult Celery plants are attacked with diseases. In the seedling stage the principal troubles are damping off, which is apparently caused by (1) *pythium*; and (2) a species of *phytophthora*.

of which there are probably two types; and canker, which is distinct from damping off, and caused by a species of *Phoma*. Mr. Stirrup considers that excessive watering, defective ventilation and defective frames in which the seedlings were grown are contributory factors. Regarding later troubles he referred to the disease known as blight, which disease has been proved to be carried by the seed. Plants raised from old seeds appear to have less blight than those raised from new seeds. Mr. Stirrup stated that spraying had given very definite results this season notwithstanding the fact that there is less Celery disease this year than usual. The cost of three sprayings, he stated, was about £1 per acre.

Brussels Linnean and Flora Societies.—The ninetieth anniversary exhibition of the Royal Linnean Society of Brussels was held, in conjunction with the old established "Flora" Society, from the 3rd to the 6th October, and was a very great success. Comte de Kerchove de Denterghem, governor of East Flanders, acted as President of the Judges, and the Minister of Agriculture, the Director of Horticulture, the Burgomaster of Brussels, and a number of other Belgian notabilities graced the occasion with their presence. At one o'clock on the first day a festival luncheon took place, and the exhibition opened at three. It was held in the Madeleine Hall, and presented a most attractive appearance, the Orchids, foliage plants, and Chrysanthemums being especially fine. Fruits were well represented, notably by a fine exhibit from the Vilvorde School of Horticulture, and a similar one from the La Hulpe College of Viticulture and Arboriculture. In floral art, the Union des Fleuristes de Belgique excelled themselves by the many beautiful designs displayed by members.

Origin of the Potato.—In an article entitled "The Potato of Romance and Reality," published Mr. W. E. Safford in the American *Journal of Heredity*, and of which a resume appears in the *Journal of the Ministry of Agriculture* for October, new light is thrown on the history of the Potato and especially its introduction into Europe. It is stated that the Potato was in cultivation in South America centuries before the Christian Era, and that persistent search has failed to find *Solanum tuberosum* growing as a wild plant, indeed, in the time of the discovery of America by Spaniards "the Potato was extensively cultivated in the higher parts of the country, now known as Columbia" (?). The native name for it was *Papas*. The Spaniards appear to have taken some of the tubers to Europe soon after their conquest of Peru, and it is known that the Potato was in cultivation in Italy so early as the year 1585. About a century afterwards it was grown in gardens in this country. The value of the Potato as a food was first recognised in Europe in Ireland, where soon after its introduction in the seventeenth century it was the main food crop of the poorer classes. It is very interesting to learn that the first county of England to adopt the cultivation of the Potato extensively was Lancashire, where so many Potato farms exist. The article states that there is not a particle of evidence to prove that Sir Walter Raleigh ever saw the Potato in America.

Distribution of Surplus Bedding Plants from the L.C.C. Parks.—The surplus bedding plants in the London County Council parks and gardens will be distributed to the public between the hours of 9 a.m. and 11 a.m. on Saturday, 17 October, 1925. Persons desiring to participate in the distribution should make personal application to the officer-in-charge at the various parks and gardens. Plants will not be handed to children under the age of fourteen unless they present a note from their parents or teachers.

Appointments for the Ensuing Week.—Monday, October 19: National Chrysanthemum Society's Floral and Executive Committees meet. Tuesday, October 20: Royal Horticultural Society's Committees meet (two days); National Sweet Pea Society's Annual Meeting; Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's

meeting; Gardeners' Royal Benevolent Institutions' special general meeting at Simpson's, 101, Strand, W.C. Wednesday, October 21: Bournemouth Horticultural Society's show (two days). Thursday, October 22: Royal Botanic Society's meeting. Friday, October 23: Association of Economic Biologists' meeting. Saturday, October 24: British Mycological Society's foray with the British Ecological Society.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Wintering Seed Potatoes.* When at Mistle

4-acre garden. I had a large garden pot put down beside every plant, to cover the latter with, should frost come on. The result was a large and plentiful crop of very early Potatoes, at a time they were fetching half-a-crown a pound in Covent Garden. I also gained prizes for early Potatoes at the Ipswich show, for two or three years. Since the above period I have not allowed an eye to be picked off a seed Potato, and ever since I have been here (11 years) I have practised the plan of not allowing a Potato to grow during winter, but,

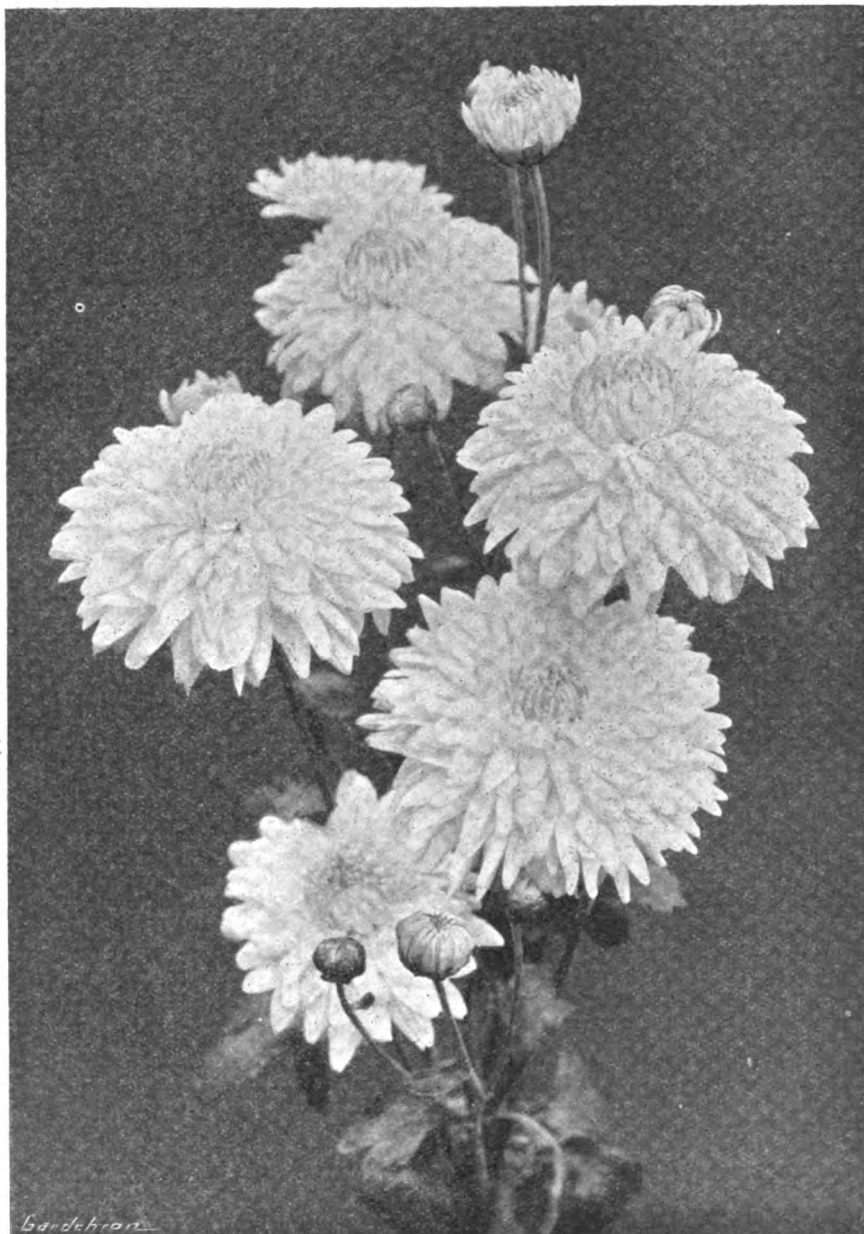


FIG. 121. CHRYSANTHEMUM CRANFORD CREAM.

N.C.S. First Class Certificate, October 5; R.H.S. Award of Merit, October 6.
(see pp. 296-318)

Hall, in the autumn of 1830 or 1831, I stored away a few bushels of early round Potatoes; they were laid on the wooden floor of a fruit room about six inches thick. When they began to sprout, an idea struck me that, if they were potted, they would come in earlier than if the shoots were pulled off then. The foreman, therefore, got orders to pot them. Upwards of a 1,000 small pots, called 60's or 4-inch pots, were used for the purpose, placing a tuber in each pot. They were removed to a cold glasshouse, where they received no water, some time early in March they were turned out along the bottom of the south walls of a

on the contrary I keep them dry and cool, and plant them shoots and all entire. In 1847 I sent 1,200 lbs. to Covent Garden market before the 19th June; the money fetched was within a few shillings of £30 for the produce of thirty rods of ground. I have proved that by properly wintering the York Late White and other late sorts, they can be ripened at least five or six weeks earlier than usual. A Potato wintered on my plan is strong and healthy, compared with one that has been allowed to expend its substance in producing useless growths.—James Cuthill, Camberwell. *Gard. Chron.*, October 19, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Cultural Notes.—The weather of October usually varies a great deal, consequently it is important that every precaution should be taken against sudden falls in the temperature, as frequently sharp morning frosts occur without the slightest warning. This might cause the temperatures in the houses to fall below the normal, and on such occasions no watering or damping down should be proceeded with until the temperature rises again, as a cold, moist atmosphere is invariably the cause of spot and disease appearing in many Orchids. It is safer to err a trifle on the warm side at night rather than to run the risk of a low temperature in the morning; a little extra fire-heat may be accompanied by more ventilation. Careful watering is an important factor in Orchid culture, especially at this season. Plants that are developing flower spikes should not be allowed to suffer from drought, neither should those that are growing freely, but plants that have completed their seasons' growth should be afforded just sufficient moisture to keep their pseudo-bulbs plump. Every precaution should be taken to prevent the plants from restarting into growth, but in cases where this cannot be prevented and the plants have failed to rest, they should be given every encouragement to mature these new growths as quickly as possible by moving them into the warmest place in their respective houses. The members of the *Cattleya* family are usually the worst offenders in this respect. The use of blinds can now be safely dispensed with and where canvas blinds are used a fine day should be chosen for their removal in order that they may be dry before being stored for the winter. Where lath blinds are used they may remain, as their use is a great help at night during severe weather in assisting to maintain an even temperature, but they should be raised again so soon after daylight as possible.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELYDEN,
Pyrford Court, Woking, Surrey.

Heucheras.—Old clumps of these beautiful subjects are never satisfactory, and young plants flower much more freely. Although easily raised from seed, the present is a suitable time for increasing the stock by means of cuttings. Crowns taken off with a little piece of the main stem and inserted in sandy soil, will root freely and make flowering plants next season. *H. sanguinea splendens* is a handsome plant, and some of the *micrantha* varieties, which are rather taller in growth, are excellent subjects for the second line of the border. *H. brizoides* is distinct, having marbled foliage and flowers of a dullish red; the hybrid *tiarelloides* is also very attractive and a vigorous grower. All are very useful for cutting.

Pansies and Violas.—These plants have revelled in the cool air and moist soil of the present season and have seldom done better. Plants which were cut back some time since with a view to providing cuttings are now carrying abundant suitable growths for this purpose, and the propagation of the necessary stock should be completed.

Osmanthus Delavayi.—This delightful little shrub is a comparatively recent introduction and being of rather slow growth is an ideal subject for the rock garden. Young plants produce a wealth of blossom in February and March and display a mass of white when fully developed. An additional value of the plant is its evergreen character, and its dark, glossy green leaves give it an unusual attraction at all seasons. Almost any position suits it, and if planted in well-drained soils its hardiness

is beyond question. Plants are usually procurable grafted on Privet, but those on their own roots are much to be preferred. This gives rise to no difficulty as cuttings of ripened wood inserted in pots in sandy soil and placed on a gentle hot-bed root fairly readily.

The Rock Garden.—The pressure of work is great in all departments of the garden just now, but the claims of the rock garden should not be overlooked. A large proportion of its occupants flower at an early period of the spring, hence it is highly desirable to do any necessary planting or replanting during the present month. Subjects planted in early autumn become well-established before winter sets in and are in a much better position to respond to the needs of growth in the following spring than late planted ones. Except in the case of plants of doubtful hardiness autumn planting should be made the rule in this department.

Gentians and Lithospermums.—Everyone who has a rock garden is anxious to have a patch of the delightful blue *Gentiana verna*, yet how seldom is it seen in a really opulent condition, and I must confess that I am amongst the great number who have not fully succeeded. It is obviously somewhat faddy in its requirements, but one does sometimes meet it flourishing under quite unexpected conditions, and occasionally good clumps of it are seen growing in grass. Probably the best position for it in the rock garden is one near the moraine where it can obtain an abundance of moisture but is free from stagnation. A much more satisfactory blue plant from the cultivator's point of view is *Lithospermum prostratum*. Although its season of flowering is spring and early summer, there is scarcely a day in the year that its exquisite blue flowers cannot be seen. Of robust constitution, the plants remain in vigour for a number of years, and a single specimen will cover a large area, hanging in graceful masses over stone and shingle. Some growers appear to experience a difficulty in the propagation of this *Lithospermum*, but if cuttings of partially ripened growths are inserted in small pots in sandy soil and placed in a cold frame about the end of July they root as freely as Mint.

Bulbs in the Rock Garden.—In preparing the rock garden at this season for spring display, the value of many of the small-growing, bulbous or tuberous rooted plants should not be overlooked. Some of them are not strictly rock plants, but the rock garden offers such exceptionally suitable conditions for them and their wealth of flowers adds so materially to the spring display that they should be included where possible. *Anemone alpina*, *A. sulphurea*, *A. apennina*, *A. Hepatica*, *Chionodoxas*, *Iris reticulata*, *I. alata*, *Narcissus minimus*, *N. Bulbocodium*, *N. cyclamineus*, *N. triandrus*, *Tulipa* sp. in variety, *Crocus biflorus*, *C. Sieberi*, *Eranthis hyemalis* and *Hyacinthus azureus* may be mentioned as suitable subjects, but there are many others of equal merit.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—Plants which are being grown for the production of large blooms for exhibition will now claim almost constant attention. The recent mild weather and warm days will have caused the flower buds to develop and to open rather quickly. As the dates of the exhibitions draw near, when it will be desired to have as many flowers as possible at their best, the need for watchfulness increases. Whilst the furtherance of this object may be gained to some extent by judicious efforts to retard the forward and to encourage progress of the backward flowers, great care and forethought must be exercised in these attempts or disappointment may follow. A premature or too dense shading of the forward flowers will result in lack of colour and stunted development. Likewise, efforts made to unduly hasten the development of backward flowers, by subjecting them to a too high temperature, may also result in

a lack of colour and substance in the flowers whilst the possibilities of loss from "damping" (perhaps the greatest enemy to be dreaded by the *Chrysanthemum* exhibitor) are greatly increased.

Damping.—To minimise the risks, or rather to guard against "damping," overfeeding of the plants must be avoided, decaying foliage should be removed from them frequently, the atmosphere of the houses should be kept as dry as possible, the watering of the plants being performed in the mornings, and all drainings from the pots should be mopped up. The air of the house should be kept buoyant by maintaining a circulation throughout by utilising both top and side ventilators, and at night, and during the daytime in damp weather, the hot-water pipes should be kept slightly warm. Whilst a too close atmosphere will cause damping, the sudden admission of a volume of fresh air will not check it but rather tend to increase it. Air should be admitted gradually as the temperature of the house rises, and whilst from the time when the plants are first housed until the flowers begin to open, the houses should be kept as open as possible, from that time and as the flowers expand, less air will be required, and the ventilators must be manipulated with greater discretion.

Staking.—See that the flowers are adequately supported with neat stakes tied closely under the calyces of the flowers to prevent damage, tying out the growths to allow each flower free space in which to open, and if the plants are being grown in lean-to houses it will be wise to turn them every few days in order to obtain well-balanced flowers.

Disbudding.—Attend to the disbudding of decorative varieties, as distinct from the small-flowered single varieties, before the blooms get too far advanced. For the purposes of cut flower decoration a limited number of well-shaped medium-sized blooms on a plant will generally prove more useful and lasting than when the plants have been allowed to grow and flower at will. Some few of the large-flowered single varieties may also be disbudded with advantage.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Early Peaches and Nectarines.—The leaves on the early forced trees of Peaches and Nectarines are turning colour and falling: the present is, therefore, the best time to repot any of the plants that require more root room. Select clean, sound pots, two sizes larger than those the trees are occupying. For drainage, use pieces of good-sized clean crocks, and over these place some of the best fibrous loam and a dash of soot. The compost should consist of three parts good fibrous loam, one part well-decayed manure, one part clean, small mortar rubble and a five-inch potful of bone-meal per barrow load of compost. On turning the tree out of its pot trim all coarse roots, suckers and root-buds, making clean cuts. Should the balls of roots and soil be on the dry side, thoroughly soak them in a tub of water for ten minutes and allow time for the water to drain away before repotting. Ram the new compost with a strong, pointed rammer, leaving about the depth of the rim of the pot for watering. Keep the trees in the open so long as the weather is favourable but do not expose the plants to frost, more for preventing injury to the pot than to the trees, but on no account take the trees indoors whilst frost is on them, but allow them to thaw gradually.

Root-pruning.—Young trees planted during the past two seasons may have made an excessive amount of growth, too rank for fruit production. The best method is to lift the tree, severing the large, coarse roots which are the cause of the trouble and carefully replant, using plenty of good mortar rubble with the replaced soil. Trees treated thus will develop new roots immediately, and no check will be given to the fruiting wood. The aim of the grower should

be to cover the trellis with good fruiting wood, allowing a distance of six inches from shoot to shoot. During bright days give the trees a daily syringing after they are lifted and lightly shade them during the brightest time of the day. It is best to allow the leaves to fall naturally from trees in a successional house as the fruiting buds are sometimes damaged when they are artificially removed. Burn all fallen leaves removed from the houses each morning, and see that the borders are not getting dry after the crop is finished. Where fruit of the latest varieties are still hanging on the trees, a little fire-heat at night will greatly assist in finishing the fruits, and keep mildew in check.

HARDY FRUIT GARDEN.

By R. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Walnuts.—So soon as the husks begin to crack and part freely from the nuts Walnuts should be harvested. The usual method is to thrash the tree with a long stick, and this also provides a rough means of pruning. At the time of collecting the Walnuts those that part freely from the husk should be laid out in a room or shed for a few days to dry. Before storing them see they are quite clean, and if necessary go over them with a fairly stiff brush. The nuts should be stored in a large vessel of some kind and kept cool until required for use. Those that do not part freely from the husk should be laid out thinly until such time as they do, and then treated in the same way as the others.

Morello Cherries.—Any parts of the tree affected with silver leaf should be cut away and burnt. If one-third or a greater portion of the tree is affected it is best to dig the tree up and burn it. Clear the ground of all the old roots before planting young trees. If lime is absent from the soil small chalk may be incorporated with the ground. Sometimes a considerable portion of a tree will die following the cutting out of a large branch some years previously, or the bark may have been bruised whilst the tree was young and gumming has followed the bruising. In either case it is much the best to root out the tree and plant a young one in its place.

Plums.—Young Plum trees that were planted in the last season or so in rich ground and have made strong growths may be lifted to check their vigour. If the trees are planted in the open, dig a circular trench two feet deep and fifteen inches from the stem, and then carefully fork the soil away from the roots until the tree may be lifted out of the ground. Cut off all coarse roots within nine inches of the stem and shorten slightly all fibrous ones before replanting. In filling in the hole make the soil very firm, spreading fine soil over the roots and well-shaking the trees so that it runs about the roots. Plant the tree a little above the ground level to allow for its sinking.

Apples.—Young Apple trees that are making rapid growth should not be dealt with so drastically as young Plums. The trench may be dug the same depth and the roots on one side pruned, forking the soil from the roots as advised for the Plums. The strong roots growing downwards into the subsoil should be severed, and the others brought nearer to the surface. All coarse roots should be pruned with a sharp knife. Examine all the other roots before filling in the hole with a view to trimming any that have been damaged. If the soil is close in texture or of a heavy nature add some material that will lighten it. In filling in the hole make the soil very firm by ramming. All the roots should be laid out horizontally one after the other as the work proceeds until the last layer is within three inches of the surface. When the work is completed, place a layer of light litter over the ground to keep frost from the surface roots.

General Remarks.—All vacant ground that can be tilled should be dealt with on every favourable opportunity, digging between the trees and burying the weeds and other rubbish.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Mushrooms.—The first beds in the Mushroom house should be producing "caps" fit for use, and attention should be given the beds so as to keep them productive for so long as possible. If the weather remains mild do not allow the temperature to rise too high in the house; a maximum of 60° will be ample, and when the colder nights set in and fire-heat has to be used, a temperature of 50° to 55° will be quite sufficient. The atmosphere in the house should never be allowed to become excessively dry. The walls should be syringed on frequent occasions and the floor damped when necessary. Water the beds when they show signs of becoming dry, with water of the same temperature as the house, and apply it through a fine rose. Collect all horse droppings possible, and make fresh beds until the house is full. Mushrooms, being used in many different ways, are greatly appreciated in kitchens throughout the winter.

lifted now and placed in boxes. The compost should consist of two parts riddled leaf-mould and one part each of good loam and sharp river sand. Reduce the flowering stems to half their length when lifting the plants and work the compost thoroughly about the roots. Make the soil firm, well water it and place the boxes in a dry frame, admitting air whenever the weather is favourable. Examine the plants occasionally with a view to removing decaying foliage, and at the same time stir the soil surface with a stick.

General Remarks.—As flower beds and borders are cleared of their summer occupants, digging should at once be resorted to. In some cases the beds will be required at once for spring-flowering plants and bulbs, and where this is the case the soil will require enriching with well-rotted farmyard manure. If dung is not obtainable leaf-mould may be used together with liberal quantities of bone-meal; the latter is a safe fertiliser to use in flower beds. Trim-

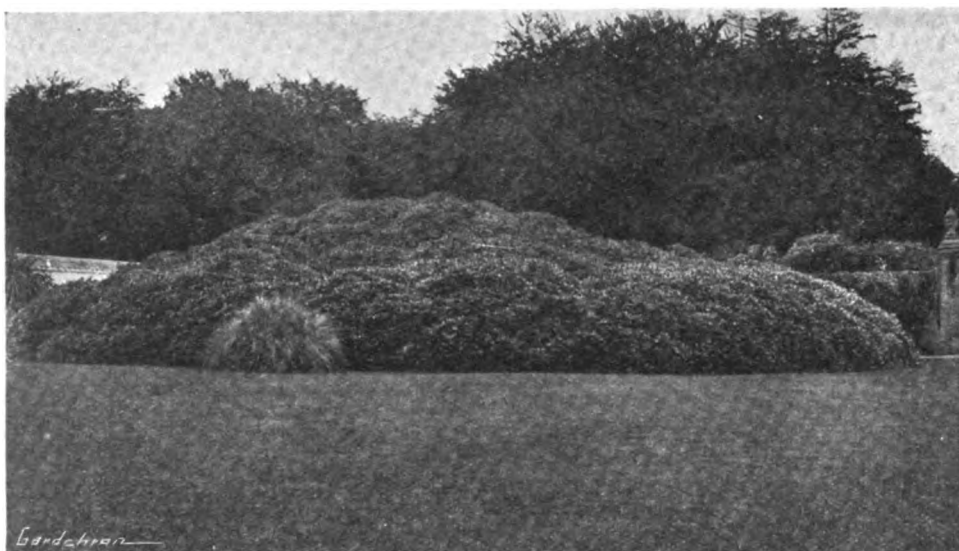


FIG. 122.—A REMARKABLE SPECIMEN OF RHODODENDRON PONTICUM AT CULZEAN CASTLE, AYRSHIRE.

(see p. 306).

Peas.—Late Peas have not been a satisfactory crop, generally, this year. In districts where the crop has not yet been spoiled by frost, every endeavour should be made to afford what protection it is possible to give, as even a few pods of fresh green Peas at this season of the year are greatly appreciated. In some seasons in parts of the south, it is possible to have a few pickings right into November.

Onions.—Onions that have been ripening off in sheds or on stages in greenhouses should be stored in their final quarters on wet days. Store the bulbs in dry sheds on shelves, or rope them, making sure that all the bulbs are sound. It is always best to sort the largest bulbs when storing so that they may be used first. Small and medium-sized bulbs always keep sound longer than the larger specimens.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Lobelia cardinalis.—These plants are now fast going out of flower, and the young growths for next year's propagation are easily discernible around the stem base. The variety Queen Victoria is especially difficult to keep over the winter in northern gardens and should be

mings from the edges of roads that have been cut earlier in the year and stacked may also be dug into the soil, and these become sufficiently decayed by the spring to allow of their being brought to the surface. Leaves are fast falling from the trees and require collecting daily; their value in the garden cannot be over estimated. Stack the leaves as they are gathered in some suitable place where they may be turned over later. Any fallen leaves near to or on plantations of hybrid Rhododendrons may be used on the spot, placing the newly fallen leaves around the Rhododendron plants and covering them with sufficient soil to prevent winds from disturbing them. This treatment each autumn is excellent for Rhododendrons growing in adverse soils.

Seakale.—Where early forced supplies of this vegetable are in demand some means for hastening the maturation of the plants should be adopted in order that they may be in a fit condition for introducing to heat ere long. The best means of hastening the fall of the leaves is to cut around the roots with a spade at a distance of from four inches to six inches from the crowns. After doing this the leaves will drop freely and expose the crowns to the light and air. When the leaf stems part easily from the crowns the latter may be lifted and forced as required.

TREES AND SHRUBS.

A GIANT RHODODENDRON PONTICUM.

YOUR contributor, G. Abbey (p. 207), has drawn attention to many fine specimens of trees; a subject which, by the way, has been so beautifully and exhaustively dealt with by Sir Herbert Maxwell, Bart., in his book *Trees: A Woodland Notebook*. As the matter is of more than passing interest, I inspected a few plants; one, a Portugal Laurel, is thirty-two paces round and nearly thirty-feet high. A fine specimen of *Laurus nobilis*, which has been regularly trimmed for many years, is also twenty paces round and about fifteen feet high, which, doubtless, had it been allowed to grow naturally, would have been of very much larger proportions. A fair specimen of *Thuya dolabrata* (*Thuopsis*) nearby, measures twenty-five paces round, and so far as I could ascertain, is about thirty-five feet high, a perfect specimen clad to the ground with its beautifully distinct foliage.

These few instances were taken at random, and I do not claim for them anything extraordinary, but the great *Rhododendron*—*R. ponticum*—growing here also, is quite out of the ordinary, and I have heard it stated to be the largest specimen in Great Britain. It measures 110 yards in circumference, covers an area of nearly 1,000 square yards, and is about twenty feet high (Fig. 122).

A few years ago, doubts were expressed by many visitors as to this *Rhododendron* being only one plant, so I made a pathway right to the centre where the original plant still stands, proving beyond all doubt that this great mass was once a much prized specimen, and the gardener of perhaps more than a hundred years ago had endeavoured to increase his stock by layering.

The resultant layers have never been removed, and the stems of some of them are from twelve to eighteen inches in circumference, while the horizontally growing branches have layered and re-layered themselves, until the whole mass has reached the dimensions stated above.

A somewhat curious feature of the artificial layering mentioned is, that whereas the young (100 years old, or more!) plants have increased as stated until their stems are like those of young trees, the branches which were pegged down are still quite thin, from two to three inches in circumference, and have probably not increased in thickness during the past hundred years, although still alive. A. T. Harrison, *Culzean Castle Gardens*.

OSMANTHUS AQUIFOLIUM VAR. MYRTIFOLIUS.

FROM a distance of twenty yards the arresting fragrance of this handsome shrub has been very marked during the past few sunny days. The curious, Holly-like *Osmanthus Aquifolium* is well-known, and the above is really only its adult stage, when, like the Holly, it becomes less ferociously armed, the oval leaves having only one point instead of the many spines of the juvenile state. From the axil of each shining, dark green, opposite leaf are produced two clusters, four to a node or joint, each carrying from five to seven small white flowers. Curiously enough, of the four clusters only two open at a time. Wise plant it has two strings to its bow!

Should inclement weather at the time of blooming spoil its first chance of pollination, the later flowers may succeed. For us, it ensures a long season of fragrance, but not of beauty, for the purity of the later flowers, is spoilt by the then dingy state of the former. If cut when the first flowers are opening and placed in water, the sprays will last for a long time in a cool room.

Unlike that of some other plants the adult growths will root freely as cuttings and the leaves retain the smooth character. In this state, on its own roots, it makes a bush eight to nine feet in height and as much through; altogether it is a most desirable shrub. J. Comber, *Nymans Gardens*.

A SELECTION OF ASIATIC WILLOWS.

(Continued from p. 292.)

AMONG the members of section *Fragiles* there is a fine species, *S. Matsudana*, very common in north-eastern China, and also known from Manchuria unto Transbaikalia. It had been mistaken first for *S. babylonica* which belongs to the next section. Of *S. Matsudana* I saw good plants in the Arnold Arboretum, and there is in China a pendulous form, I called var. *pendula*, which Sargent in his travelling notes (from 1902) called the common Peking Willow, forming large trees with pendulous branches. It seems to take in these regions the place of the more southern *S. babylonica*. This Weeping Willow seems to be very promising for the colder parts of Europe, and it would be interesting to compare it in its effect with *S. vitellina pendula*. There is another Weeping Willow of this section, namely *S. elegantissima*, which is supposed to have been introduced into Europe from Japan. If this is true, it may represent a hybrid between *S. babylonica* and *S. hondoensis*.

The species of the next section are closely related to those of section *Fragiles*, and it is difficult to separate the *Fragiles* from the *Albae* unless by the presence of a dorsal gland in the female flowers, which is wanting in the latter section.

Of the *Albae* section the species of the greatest interest for us is *S. babylonica* of which Mr. Wilson states that it is the common tree Willow of the region bordering the Yangtze River from its mouth westward for nearly 2,000 miles. It is probably spread throughout the mild and warmer parts of China, and, in my opinion, it is the same as *S. cantoniensis* of Hance, which is common in the delta of the Canton River. It is a favourite tree with the Chinese and is commonly depicted in Chinese drawings, pictures on porcelains, on wood-carvings, and other works of art. In Japan it is not known wild, but has been introduced long ago. The typical wild form is not pendent, but forms upright trees up to 12 m. in height. According to Wilson, all forms are met with, from the (to us) typical form with pendent branchlets and arching branches to one in which the branches are ascending-spreading. The most common form is intermediate between these extremes, and this probably represents the phylogenetic type. The Weeping Willow came to Europe about 200 years ago from the Orient, but it is not native of the region near Babylon. As is well-known, the Willow of the Bible is *Populus euphratica*. There is no need to write more of the horticultural merit of *S. babylonica*. In central Europe most of the so-called *S. babylonica* are really hybrids with *S. fragilis* for which the correct name is *S. blanda*, or they belong to *S. Salamonii*, the cross between *S. alba* and *S. babylonica*.

Quite different in its aspect from *S. babylonica* is *S. jessoensis*, another species of the *Albae* group I wish to draw the attention to. It has been introduced by Wilson, and he states that its habit is singularly like that of the English Oak, forming a tree from 20 to 25 m. tall, with a trunk from 4 to 5 m. in girth, gray, shallowly-fissured bark, large, ascending-spreading and spreading branches, and grey-green leaves. It is known only from northern Japan and quite hardy.

The next section, *Sclerophyllae*, comprises some mountain Willows from western China besides *S. sclerophylla* from Kashmir. A. Rehder in his note on the ligneous plants of northern China (in *Journ. Arn. Arb.* IV. 140 (1923), has added another species from the Taipei-shan, in Shensi, where Purdom collected it; *S. cupularis*, an apparently very distinct species, of low habit, related to *S. oritrepha* from the mountains south-west of Tatsien-lu. From both localities we have already received some good and hardy trees and shrubs, and there is no doubt that both these Willows would prove equally hardy. From western Szechuan,

Wilson brought also *S. atopantha*, which becomes a larger shrub, up to more than two metres high. These species are probably of the same ornamental value as, for instance, *S. hastata*, but represent forms of greater taxonomic interest.

Quite different from all species hitherto mentioned are the members of the section *Magnificae*, especially *S. magnifica*, which has been introduced by Wilson in 1909, and of which Mr. Bean rightly states that it is the most remarkable of all Willows. He compares its leaves with those of *Arbutus Menziesii*, but to my mind they much more resemble some broad-leaved *Prunus* (sect. *Padus*) from western China. It is certainly a very strange Willow, and looks extremely distinct. The leaves measure up to 25 cm. in length, and are more than half as wide. It forms sturdy bushes from 1.5 to 6 m. According to my own observations it is, unfortunately, not really hardy in central Europe, but it can be grown in sheltered places with rather good success. With its very long, straight catkins, which reach more than 15 cm. in length, and do not appear before the end of May or in June, good healthy plants certainly make a striking impression.

In section *Eriostachyae* we find a few very distinct and handsome species well-worth introducing to our gardens. *S. eriostachya* comes from Nepal where it had been collected by Wallich in 1821. It seems to be a rare species, and it would not be as hardy as the other species from western China of which, unfortunately, none has been introduced. A Willow like *S. phanera*, with its very long and distinctly reticulate leaves and its long slender male aments, would make a very striking feature in every garden. The leaves are up to 11 cm. long, and 3.5 to 4 cm. broad, and greyish-white underneath with a handsome dense silky-tomentose pubescence when young. Even more graceful, with narrower leaves, with a white, shining, silvery pubescence, is *S. phaidima*; both flower late in May or in June. It is a great pity that Wilson did not send home cuttings of either of them, nor of such species as *S. moupinensis*, *S. Fargesii*, or *S. Ernestii*. *S. phanera* forms a very large bush or a tree up to 12 m.; *S. phaidima* remains a shrub, and the other species usually become a large shrub. In *S. moupinensis* there is the same almost verticillate arrangement of the flowers on the rachis as in *S. magnifica*. There are two more species from western Szechuan, *S. argyrophlegma* and *S. plocotricha*, that seem to be rather ornamental, too. To a certain extent all these species remind us of *S. viminalis* or partly of *S. daphnoides*, but they form a group of very different systematic affinity, and have no close relationship to any other group of which species are represented in our gardens.

The next two sections are also restricted to western China and the Himalayas. They can only be separated on account of the presence or absence of the second (dorsal) gland, as already explained. In the *Denticulatae* two glands are present in the male flowers, while in the *Longiflorae* the dorsal gland is wanting. Of the first section no species seems to have been introduced so far, and I doubt if the Chinese species like *S. dissa* or *S. dyscrita* are of any horticultural value except to a salicologist. Of the *Longiflorae* *S. hypoleuca* has been introduced by Wilson from Szechuan and from Hupeh. It forms rather dense shrubs with small, elliptic leaves that are glabrous when mature and glaucous beneath. The catkins appear with the leaves in April and are from 3 to 5 cm. long, and hardly 0.5 cm. thick. Another species, *S. cathayana*, which I collected myself in north-western Yunnan, seems to be very common in the mountains of western Szechuan whence Wilson sent plants to the Arboretum in 1908. It is a rather variable species with small broadly-elliptical leaves up to 2 cm. in length that are glabrous when mature and glaucous grey beneath. Camillo Schneider.

(To be concluded.)

KEW NOTES.

THE attractive, pinnate-leaved *Sophora japonica* is flowering very freely this autumn, and is the latest of all big-growing trees to make a showy floral display. As an isolated specimen on a lawn the tree is of rounded form, with wide-spreading branches, fifty feet or more in height. Notable features of the tree are that it is one of the last trees to develop rich, dark green foliage in spring, and one of the last deciduous trees to shed its leaves in autumn.

The year 1753 is recorded as the date of the first introduction of *Sophora japonica* to British gardens, and though it bears the specific name of "*japonica*" it is only known in Japan as a cultivated tree, having been introduced from China in the distant past.

The creamy-white flowers are very freely produced in terminal panicles, six inches to nine inches long and about as wide. The individual blooms, each about half-an-inch long, appear to last only one day and then fall, but so freely do they open in succession, that this weakness would pass unnoticed were it not that the ground is littered with them.

The North American Service Berry, or June-Berry (*Amelanchier canadensis*), is a delightful study of autumn tints. The colours vary on different trees, one or two being entirely a rich red, while others are a combination of gold, orange and red. Very showy also in April when covered with small white blossoms, the June-Berry is one of the most useful of the smaller-growing trees (fifteen feet to twenty feet, sometimes more) for gardens of moderate size.

Four species of *Koelreuteria* are in cultivation in our gardens, three being natives of China and one of Formosa. Two, *K. apiculata*, and *K. paniculata*, are hardy deciduous trees, and two, *K. bipinnata* and *K. formosana*, require the protection of a greenhouse, except in the most sheltered gardens of the south and west.

K. paniculata was first introduced to British gardens from China in 1763. It is an ornamental foliage tree, and because of its ability to thrive in comparatively poor soils is sometimes met with in town gardens. A sun-loving subject, it is only during a hot summer, such as that of 1921, that the full beauty of the masses of rich yellow flowers is seen.

K. apiculata, introduced by Mr. E. H. Wilson, from Western Szechuan, is also a sun lover, but apparently not to such an extent as *K. paniculata*, or at least it is not so limited in its possibilities in our less favourable climate. Both species flowered freely in July and August following a six week's spell of hot weather, but whereas not a solitary capsule developed on *K. paniculata*, the illustration (Fig. 123), provides ample evidence of the bladder-like fruits on *K. apiculata*.

Mr. Wilson describes *K. apiculata* as a large bush or small, deciduous tree, ten feet to forty feet in height, with a trunk up to three feet in girth. The leaves are pinnate, often doubly pinnate, eight inches to about eighteen inches long and half as wide. The yellow flowers, half-an-inch long, are freely borne in July and August. These are followed by an inflated, three-valved capsule, about two inches long and one inch broad. As these turn a rich, dark, brick-red in colour, and remain for some time in beauty, the effect during September and October is very striking. Each capsule contains six seeds the size of small Peas.

Seeds in this case provide ready means of increase, though, failing this, the *Koelreuterias* are readily propagated by root cuttings. In five-inch and six-inch pots the subject of this note and also *K. formosana* are effective foliage plants, and as useful, I may suggest, as *Grevillea robusta* for sub-tropical bedding and in the greenhouse.

American visitors to Kew knowing any thing of their native plants seldom pass without comment the Creeping Wintergreen or Box-berry (*Gaultheria procumbens*), a native of eastern North America, which carpets the ground under deciduous *Magnolia* trees in the Azalea garden. It is a dwarf, neat growing

evergreen, with dark, glossy-green leaves; the trailing stems spreading over the ground form a carpet three inches or so in thickness. The pink-tinted white flowers appear among the foliage during July and August. Just now the bright red globose fruits, the size of large Holly berries, are noteworthy.

In the Leguminosae collection a large bed of *Lespedeza Sieboldii* is worthy of note. Against a warm wall it is a useful climber, but in the open is best cut down to the ground annually in early spring. From the woody root-stock thus formed vigorous growths push up, terminating in late September and October in loose panicles of rosy-purple, Pea-shaped blossoms. It is a native of north China and Japan. *A. Osborn.*

long pedicels. The plant is not of more than botanical interest.

The Chinese Pokeberry—*Phytolacca clavigera*—first raised from seeds sent home by Forrest in 1913, is a notable addition to the herbaceous border. With a general resemblance to the American *P. americana* (more familiarly known as *P. decandra*), it far surpasses that species in beauty, for the flowers, closely set in massive spikes sometimes exceeding a foot in length, are clear rose colour, the five segments of the perianth surrounding a malachite-green ovary. These are succeeded by jet black, shining berries, which remain conspicuous in autumn, though occasionally despoiled by tits. The plant is easily raised from seeds, and, being



FIG. 123.—FRUITING BRANCH OF KOELREUTERIA APICULATA.

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

ALLIUM *Beesianum* is at its best just now, September 25, and takes a very high place among autumn-flowering bulbs, forming a clump of stems and leaves about fifteen inches high, with heads of drooping flowers of a good blue. It produces plenty of seeds which germinate quickly, so we may expect that before long it may be obtained at considerably less than the present high price. I have noted it as a meet companion for *Nerine Bowdenii*, whereof the rose-coloured blossoms provide a pretty contrast with the blue of the *Allium*. *A. Bulleyanum*, also in flower just now, does not fulfil the expectations suggested by the namesake of one who has enriched our gardens with so many choice species. It grows taller than *A. Beesianum*; the flowers are small, maroon in colour with green centres, set in a head on

herbaceous, must be treated to a deep, rich soil if it is to attain its full stature of five feet with spreading branches. Miss Snelling has given a faithful portrait of this fine Pokeberry in the *Botanical Magazine*, t. 8978.

Another invaluable herbaceous plant for autumnal display is *Aconitum Fischeri*. Anyone who possesses a highly-coloured strain of *Cercidiphyllum japonicum* (some forms of this forest tree never display the brilliant colouring of the best strain) and who desires a combination of rich hues should plant this Monkshood alongside of it; for its blue panicles are lavishly produced and contrast splendidly with the carmine and gold of the tree.

It is not often that our northern summer is sunny enough to bring *Clerodendron trichotomum* into flower in time to make a display before the dark days; in fact, the three miserable summers of 1922-3-4 had almost determined me to dismiss our plants to make room for something less exacting. But the glorious season now culminating in the suave sunshine of St.

Luke's summer has brought forward this tree enough to remind one of its behaviour in more southerly climes, and it is finely decked with snowy stars set off by the dark red calyx. Like its crimson-flowered congener, *C. foetidum*, while the flowers are delightfully fragrant, the leaves resent handling by diffusing an odour which has been described as nauseous, but which, after all, like our native Gladdon (*Iris foetidissima*), reminds one of nothing worse than cold roast beef. Both species of *Clerodendron* send out suckers to an astonishing distance. We have been blessed with an ideal season for farm and garden. A soaking winter and spring left the soil saturated in a degree that carried us scatheless through the long drought of June and July. The owner of a large farm in Berwickshire told me that he carried in the last load to his stackyard on September 18—the exact date on which he began reaping in 1924. *Herbert Maxwell, Monreith.*

NOTES FROM THE TOKYO BOTANIC GARDENS.

THE LAKE-LEAF PLANT.

APONOGETON (or *Ouvirandra*) *fenestralis* is a very interesting aquatic plant, and examples are to be found in most botanic gardens. It is a native of Madagascar where the natives call it "Ouvirandrano," and eat the roots just like water Yams. For us, however, the beautiful leaves are the attraction. Specimens have been cultivated in our garden since 1908, when three plants were brought from Buitenzorg by Dr. Nakai, but alas! only one remains; this has bloomed three times, and is very precious as being the only living specimen in Japan. Bailey in his *Cyclopædia of Plants* states that "It is better cultivated in the tub than any other way, and for some unknown reason, the plant seems rarely to succeed in a jar or glass aquarium." In our garden we grow it in an ordinary aquatic pot. In winter it produces small leaves only, but when the weather improves it makes very good growth, some leaves having a twelve-inch blade and six-inch stalk. I do not know how to propagate it; although it has bloomed three times no seeds have developed.

GLAUCIDIUM PALMATUM, S. ET Z (*syn.* *HYDRASTIS JEZOENSIS*, S. ET Z).

It is very interesting business to cultivate this alpine plant either in the rock garden or in a pot. It likes soil containing plenty of humus rather than sandy loam; a half-shaded position suits it. On Mount Shirane it blooms in the early summer, but in our garden it flowers in April; on the mountain we can see the snow until the early summer, but so soon as the snow disappears the flower heads appear; these are a lovely pale purple colour, three inches or so in diameter, and somewhat resembling the bloom of a tuberous-rooted *Begonia* with its four, petal-like, calyx segments and many clear yellow anthers which form a very beautiful contrast (Fig. 125). Our garden book informs me that from sixty to seventy years ago there was a variety with red flowers, but I do not know such a plant.

PRATIA BEGONIFOLIA.

There are many pendulous plants for use in the summer time, but I believe one of the best is *Pratia begonifolia*, Lindley (*syn.* *Lobelia begonifolia*, Wall). Until recently, I had little knowledge of this plant, but some of our Japanese gardeners cultivate it in pots and call it by the Chinese name of Suishu-Giyokutai, which means the "Hanging Pearl-Gemmy Band." In January of 1918 I found specimens at Arisan, Formosa, at about 6,000 to 7,000 altitude, where it grows among the moss and covered the small cliff at the road side. Flowers and fruit can be found the same time; the former are of little interest, but the latter are attractive; the small, pea-nut-like, purple fruits showing up well against the small *Begonia*-like leaves. I brought back specimens, and have grown them in our garden.

Pratia begonifolia is not difficult to cultivate, but it is best planted in a suspended basket or pot (Fig. 124), and given a sheltered place. It will show its little white flowers and purple fruits in the summer; if exposed in a sunny place it will be more compact and not hang down so freely, while, if planted in an ordinary low pan or on the ground it will become a creeping plant and root into the ground. With us it needs the protection of a cold frame in winter. There is a figure in *The Botanical Register*, t. 1373 (1830), but unfortunately no fruits are shown, and these form the great attraction of the plant. *N. Matsuzaki, Botanic Garden, Imperial University, Tokyo.*

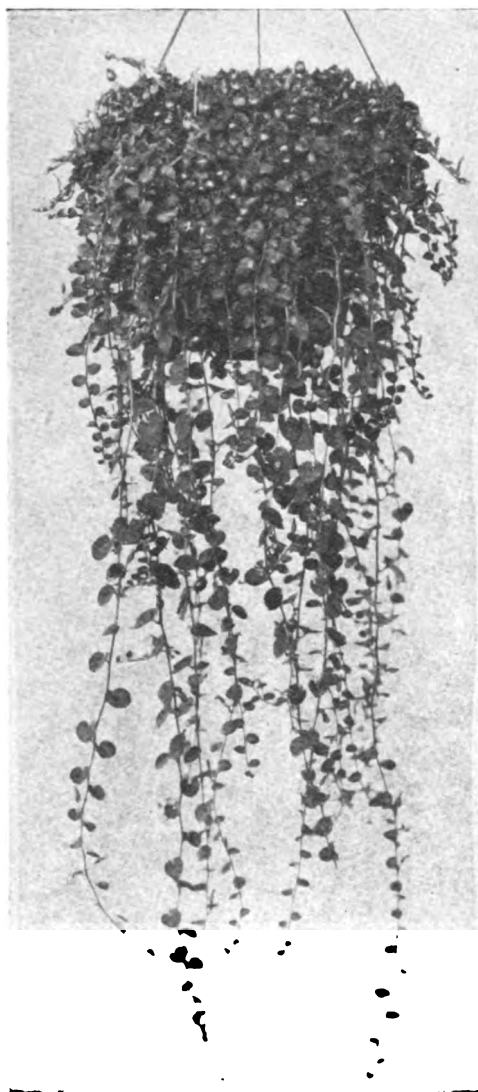


FIG. 124.—*PRATIA BEGONIFOLIA*.

SUMMER BEDDING PLANTS.

TWO UNCOMMON VERBENAS.

So far as my experience and observations have gone concerning the subjects of this note it would be far truer to write two *very* uncommon Verbenas. For, outside my own growing, I have never seen in any garden it has been my privilege to visit, over a fair number of years, either *Verbena erinoides* or *V. Drummondii*. And what, surely, is more astounding, is the fact that I have never found the former listed in any catalogue save that of Messrs. Ryder and Sons. St. Albans, and *Verbena Drummondii* in no other catalogue beside Messrs. Sutton and Sons, and neither of these firms list both species or varieties—whichever they are. Does this singular omission by other nurserymen from their lists imply non-acquaintance with these Verbenas? It would seem so.

However these questions may be answered, the value of the two plants for use in summer beds is beyond all doubt. Both are excellent. They are best treated as half-hardy annuals, that is, raised under glass and transplanted where a reasonably early-flowering is desired. Otherwise sow the plants where they are required to flower.

Verbena Drummondii has the larger individual flower and the bigger head of bloom, the colour of which may be described as rose-pink, while its leafage much resembles that of the ordinary, summer-bedding Verbenas.

Verbena erinoides is an equally strong growing plant, but its foliage is more refined looking, the flower heads rather smaller and far more numerous produced. It continues to bloom throughout the season, and a well-filled bed is well worth seeing. The foliage is refined; it is distinct, and at once noticeable, being very dark green and beautifully tripinnate in shape. Perhaps rosy-lilac would best describe the colour of the flowers.

It would be of interest to learn to what extent either or both of these Verbenas have found acceptance with any other readers of *The Gardeners' Chronicle*. *C. Turner, Amphill Park Gardens, Amphill.*

[*Verbena erinoides*, the plant known also as *V. multifida* and *V. pulchella*, is the Moss Verbena. Another plant known as *V. erinoides* is synonymous with *V. Berteri*. *V. Drummondii* is a variety of *V. Aubletia*. —Eds.]

DAHLIA COLTNESS GEM.

If this dwarf bedding Dahlia behaves in ordinary years as it has done during the present season it should become as popular a bedding plant as the scarlet Geranium. In Mr. West's nursery at Brentwood, a bed of *Coltness Gem* was one of the most conspicuous features in his large collections of Dahlias of all types; in another garden I have visited two large beds have been a gorgeous spectacle for several months past. *T.*

HARDY FLOWER BORDER.

PHORMIUM TENAX.

IN an east of Scotland garden, the high winds blowing from the Firth pile the water over the roots of the New Zealand Flax planted at the head of a lake. Those clumps whose roots are submerged are healthy, and flower as profusely as those planted on the higher ground bordering the lake.

Phormium tenax is hardier than is generally supposed. In its season of flowering it is distinct from any other evergreen herb. Indeed, the branched panicles of yellow and red flowers on leafless scapes some ten feet to fifteen feet high are almost grotesque in appearance.

The fibre obtained from *Phormium tenax* is said to be the strongest vegetable fibre known. During the late war its cultivation commercially for fibre production was urged by those who had seen it growing with so much vigour in the west where there are many huge clumps. The plant is stiff in habit, with rigid, glaucous, two-ranked, sword-shaped leaves. The variegated varieties are often grown in tubs for the decoration of verandas and terraces. *Fred W. Jeffery.*

THALICTRUM DIPTEROCARPUM.

THIS plant (see p. 269) has been grown successfully on a sunken border under which land pipes were laid to carry away over-flowing water from a small pool. The under ground moisture and somewhat peaty soil which contains an amount of broken sand-stone appeared to afford ideal conditions for the well-being of the plants.

Other plants which grew well under these conditions were *Armeria caespitosa*; several Campanulas, notably *C. arvensis* and *C. excisa*; members of the *Mimulus* family; *Linaria alpina*, *Potentilla nitida* and *Silene acaulis*, while the various *Trolliuses* were exceptionally robust, as also were many other subjects often described as moraine plants. *C. Ruse.*

ALPINE GARDEN.

THE STEMLESS CARLINE THISTLE.

THE Carline Thistles, or Carlinas, are said to derive their name from Charlemagne, who, when a pestilence broke out in his army, caused an arrow to be shot, deeming that the plant on which the arrow lay when it had sped its course would be a cure for the disease. According to the legend the arrow descended and rested on the Carline Thistle, and, so the tale goes, its application proved the much desired remedy. The tale makes more interesting the several plants of the genus, but, as gardeners, we are more concerned with the horticultural value of the Carlinas. Two species are frequently catalogued. One is *C. acanthifolia* and the other *C. acaulis*, but the latter is not so stemless as the name would suggest. It is, indeed, rarely stemless, the only method to keep it thus being to starve it in poor dry soil, when its straw-coloured flower will develop in the midst of the narrow, spreading, spiny leaves. *C. acanthifolia* is in reality more generally stemless, if starved in poor soil, and is a superior plant. It makes spreading turfs of long, spiny, leaves with a solitary, large, straw-coloured flower set in the centre.

Plants like this do not transplant well when large, and they should either be secured in pots for planting without disturbance to the ball of soil, or raised from seeds and planted out where they are to remain, when small. When established, *C. acanthifolia* will cover a foot or two of space, and should be planted on a dry, level spot on the rock garden, and in well-drained, very sandy soil.

CAMPANULA EXCISA.

CAMPANULA excisa, after existing for several years in my garden, disappeared, to my regret, during the prolonged illness of the owner. This disappearance was undoubtedly due to the want of personal attention in the matter of watering. It was planted in a half-shaded position in the rock garden in a mixture of leaf-mould, sand and grit, and was mulched with grit and small gravel. With almost daily watering in dry weather, *C. excisa* had spread and flowered well.

It is a rare plant in gardens and nurseries, and many who have tried it have had to confess failure. One has to admit that careful study of the literature on the subject of how to cultivate *C. excisa* has not thrown much light upon the question. And, as yet, I have found no more excellent way than my own. Possibly, the failure of many plants has been due to the cause suggested by an eminent writer—that of the plants purchased from nurseries having been over-propagated. It is not every one who can make a pilgrimage to Monte Rosa in the Alps and bring from its native places, where it grows best by the alpine streams in the glacier region, a clump of *C. excisa*, and to plant it in leaf-mould and rough sand over underground water. Most of us have to content ourselves with nursery plants. Probably the teaching that they should first be planted in pure sand may be excellent, but I imagine plenty of water is required, although in some places in its native habitat *C. excisa* appears to grow in pure granite sand. Probably, in nature, its thready roots go deeply down and draw moisture from invisible sources. From what I have seen of *C. excisa*, it must never suffer from drought, and the mulch of grit and gravel helps to retain the moisture we supply.

As for the appearance of the plant, it is a quaint little subject with small leaves, out of each of which a small piece appears to have been carefully cut, and growing almost close to the soil. Above these are borne, on the slenderest of stems, the delightful little violet bells.

This *Campanula* is dear to the heart of the lover of the choicer treasures, and it calls for all his personal attention to persuade it to be happy. In summer, where it does well, it is a gem of quiet and quaint beauty, needing, however, the seeing eye of the devoted alpinist to appreciate its full beauty. *S. Arnott.*

INDOOR PLANTS.

BOUGAINVILLEA GLABRA.

MAGNIFICENT specimens of this free-flowering greenhouse climber are to be found in different parts of the British Isles, in large conservatories or winter gardens. Provided the roots and main stems are warmly situated the top growth will withstand a low temperature. A mixture of good loam, peat, and old brick rubble makes the best planting medium. As this *Bougainvillea* soon shows the effect of a confined root area it is far better to start it in a well-drained border rather than attempt to grow large specimens in pots or tubs. *Bougainvillea glabra* submits to severe pruning when dormant, and may, therefore, be kept within the limits of space allowed, but, if plenty of room is available and the young growths are tied in so soon

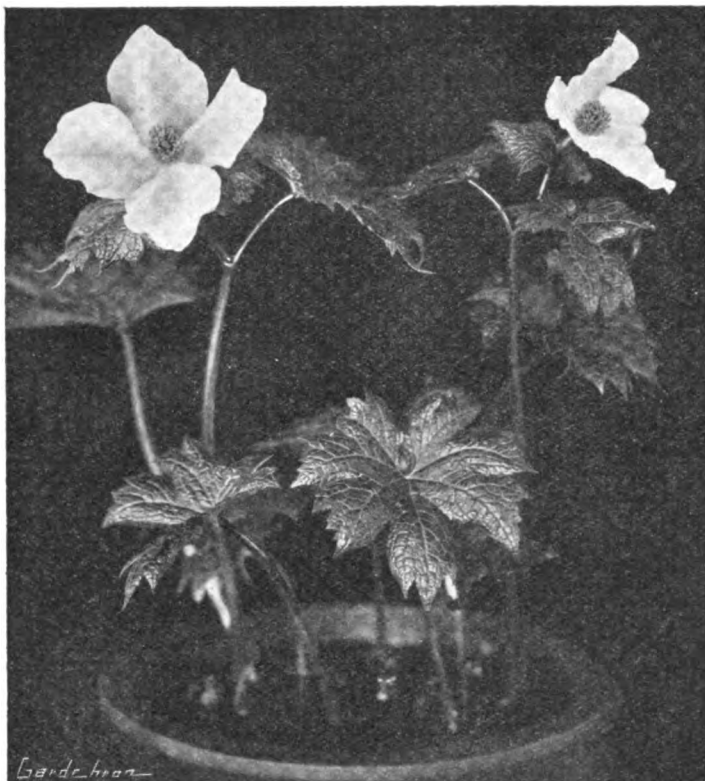


FIG. 125.—GLAUCIDIUM PALMATUM.

(see p. 308).

as the leaves have fallen, the very finest result will be produced in the following season. The illustration (Fig. 126), shows a specimen of *Bougainvillea glabra* planted here about twenty-five years ago; the annual display of bloom is very fine. Although the structure is of iron and the upper stems of the plant have been quite frozen in severe weather, the specimen has this year surpassed itself. *Plumbago capensis* is its neighbour (on the left), and the soft colours of these two subjects have combined to produce a picture of great beauty. *G. W. Stacey, Chorleywood Cedars.*

TIBOUCHINA SEMIDECANDRA.

THIS showy *Melastom* is an ideal subject for training under a rafter in the cool greenhouse. It is an autumn-flowering subject of considerable floral effectiveness. The large, deep purple flowers are short lived, but are freely borne on branched panicles at the tip of the current year's shoots. The branchlets, buds and leaves are densely hirsute, the soft, white hairs giving a silvery sheen to the foliage.

When grown under a rafter the main branches should be suspended some little distance from the roof to allow the young growths to develop clear of the glass. After flowering, the plant should be given a period of rest, and before growth commences in the spring the shoots of the previous year should be cut back to within a few buds at the base.

Cuttings root readily inserted over a little bottom heat, and plants may be grown as bush specimens and flowered in pots. *Fred. W. Jeffery.*

ORCHID NOTES AND GLEANINGS.

LAELIO-CATTLEYA ROYAL STANDARD.

MESSRS. STUART LOW AND CO., Bush Hill Park, send a flower of L.-C. Royal Standard, their latest novelty, which for large size, fine shape and rich colour, stands in the front rank even in these days when the *Laelio-Cattleyas* have attained surprising excellence. It was raised between L.-C. Purple Emperor (*C. Warscewiczii* × L.-C. *callistoglossa*) and *C. Hardyana* var. *His Majesty*. The flower is eight inches across, the sepals rosy-mauve,

and the broad petals, which are undulated at the margin, are of a darker tint of rosy-mauve. The very broad lip is circular in outline and widely expanded, the whole of the front lobe being deep Tyrian purple, with a ruby-crimson shade, the interior of the tube being chrome yellow, and the fleshy column white. The flower is well-balanced in all the parts, and is one of the showiest and most attractive of its class.

DENDROBIUM STRIATUM.

It is interesting to record that this very rare Philippine species has flowered with Admiral Sir A. Berkeley Milne, Bart., Inveresk Gate, Musselburgh, N.B., who has forwarded me a flower. Admiral Milne states, "the plant is growing in a pot with *Dendrobium Victoria Regina*. The latter is in bloom also." In the description of the plant in *The Gardener's Chronicle*, November 25, 1905, p. 382, when the late Sir Trevor Lawrence received a Botanical Certificate for it at the Royal Horticultural Society's meeting, it was stated to have been imported from the same region in the Philippines as *D. Victoria Regina*.

The flower is about one inch in width, the sepals and petals nearly equal, whitish, with closely arranged purple lines, the spur, which is as long as the free parts of the sepals, being similarly coloured. The front lobe of the lip is white with some purple lines; it is a very distinct species. *J. O'B.*

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ADVERTISEMENTS should be sent to the **PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.**

Editors and Publisher.—Our correspondents would *obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS.* The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

Newspapers.—Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editors to see.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the **EDITORS, 5, Tavistock Street, Covent Garden, London.** Communications should be written on one side ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

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THE GARDENS OF THE TRIANON.

DURING the past and present centuries so much has been written about Marie-Antoinette and her expensive and charming little domain at Trianon that one would imagine it difficult to find anything fresh to say—yet M. Pierre de Nolhac* has managed to perform this feat, and, what is more to the present point, he has contrived to make his descriptions especially alluring to those whose profession, or whose hobby, is the making of gardens.

Needless to say, he has drawn largely upon the usual sources of information—upon the prim reminiscences of the always so respectfully admiring Madame Campan, the anxious despatches of Comte de Mercy to his imperial mistress at Vienna, the journal of Dangeau, the correspondence of Grimm; but while marshalling in his service all these and many other sources of information, he is able also to give his readers much that they could not obtain from any other writer, by reason of his position as a former Keeper of the Museum at Versailles. He knows, as few could know, what is left of Trianon, Great and Little, and of Versailles; he can trace for us the discrepancies between the old and the new, and recreate in imagination even those features all traces of which have entirely disappeared.

The author reminds us that the Trianon which is most familiar to us as that of Marie-Antoinette was not the original château of that name, which was built in 1670 for Madame de Montespan. Even then, the gardens formed the chief attraction, notably a winter-garden in which Orange and Lemon trees flourished, and pot-plants were sunk in the borders. The open-air garden at this period was remarkable for its lovely scents, all the most fragrant flowers being sought for its enrichment. In 1688 the building was demolished and a new château erected, but still it was the gardens which were chiefly admired—designed by Le Nôtre, in a style somewhat similar to those at Marly, they still present, in great measure, their original aspect.

In 1749 and 1750, Louis XV, who was a very keen amateur horticulturist and botanist,

had a new nursery garden made and several hot-houses built in a part of the gardens at Trianon, close to the spot on which, later, the Little Trianon was to be erected. The King had studied agriculture and botany for years with great assiduity, and had long been interested in attempts to acclimatise exotic subjects such as the Fig, Coffee-bean, and Pineapple; he also made great efforts to popularise the Strawberry, in which most people at that time took but a languid interest. The care of the new gardens and grounds was entrusted to the celebrated botanist, Claude Richard, whom Linnaeus, who had worked with him, described as the cleverest gardener in Europe. The son of an Irishman, Richard had learned botany from Lemonnier, and had a horticultural establishment of his own at St. Germain which the King was very fond of visiting. When Richard took service at Trianon he had great freedom of action, and was enabled to pursue a number of very valuable researches, besides giving lectures on the then new method of nomenclature originated by Linnaeus. Naval officers and other travellers were encouraged by the King to send to Trianon any new or rare plants they found, and so many were contributed that for these, and for the results of some voyages undertaken by Richard himself, a new and large hot-house had to be installed. It contained over 4,000 plants, methodically classified—by far the best and richest collection which existed at that period. It was at about this time that the China Aster was introduced by missionaries, and proved so amenable to cultivation and improvement that it has been a garden favourite ever since.

M. de Nolhac is so interesting on this part of his subject that one might well be tempted to dwell upon it at greater length, but for the fact that as a botanical garden and research station Trianon soon ceased to count. When, after the death of Louis XV, his successor presented the Little Trianon and its gardens to his Queen—with or without the improbably gallant comments loyally ascribed to the occasion—she received it with eager gratitude as a playground, and proceeded ruthlessly, with the help of her friends, to fit it for that destiny. The designs for the remodelling of the gardens submitted by Antoine Richard (the son of the famous botanist) naturally included the big hot-houses and the rare trees and shrubs so carefully tended by his father and himself; they included also a heterogeneous collection of the "ornaments" which were just then the rage in France—a taste acquired, sad to say, from the English—such as ruined temples, Chinese bridges, the kiosks, pagodas, allegorical statues, even funeral urns! Marie-Antoinette, her natural good taste aided by that of the more sensible of her courtiers, rejected these things; rejected also the glazed orangery which was such an eyesore, and the all-too-utilitarian nursery beds. The Richards were deeply wounded, that was inevitable; but they were too accustomed to royal whims to allow their vexation to be apparent. After all, the chief results of their careful work were saved, for the rare plants, still retained in their proper classification, were transplanted bodily to the Jardin du Roi (afterwards Jardin des Plantes), in Paris, where much botanical activity was then proceeding, and where the Richards' collections were warmly welcomed.

To compensate for the rejection of their designs, the Richards were given entire freedom to plant as many rare trees at Trianon as they liked, and to continue their experiments in acclimatization.

The author writes very amusingly on the subject of the "new" style of gardening then popular, which, as exemplified at Stowe Park and at Kew, was a mixture of imitation Chinese and imitation Nature, still further confused by a dash of classical Greek. He would appear—perhaps by contrast with these horrors—to regret the formal dullness of Versailles and its imitators, of which the French were heartily tired by the middle of the eighteenth century, and from which Marie-Antoinette in her youthful freshness turned with a natural disgust. In any case there is no doubt that the design of the Trianon gardens, greatly

influenced by her, was far in advance of its times, and contained but little that even modern taste would very severely decry. One may laugh at the Temple of Love, the "belvedere," the artificial rock set in a landscape in which no natural rock could possibly be expected, but she certainly avoided all the worst excesses of the mania for litter then prevailing. The author thus describes (p. 97) the final realisation of the design:—

"A great rock, provided with a spring of water, rises at the end of a little lake hollowed between two hills and prolonged by a river. This stream, crossed by a stone bridge near an islet, describes a graceful curve to the north of the garden, and folds back and spreads round a large island and ends in two arms that encircle a peninsula in front of the château. Several clumps of trees of varied foliage are placed amid walks where the straight line appears only once—in the case of the avenue of Judas-trees which, for a while, borders the stream. Such is the harmonious and peaceful design that was carried out."

The gardens were completed in 1780, and in the same year the little theatre was inaugurated. These two correlated facts show as well as anything else that the Queen's interest in gardening was only secondary; that is to say, she was fond of gardens simply as a setting for "fêtes." She loved having the grounds illuminated at night, though it is difficult to imagine much pleasure in illuminations which took the primitive form of blazing faggots in default of any more modern method. Madame Campan, admiring as usual, writes in her memoirs of the beauty of the gardens when thus lighted, but has to admit that fifteen hundred faggots of wood had been used on one single occasion—a figure which was afterwards found to be far within the mark. The cost of making and maintaining the gardens, was, of course, enormous. As many of the debts incurred remained unpaid up to the time of the Revolution it is impossible to ascertain the real figure, but it was probably not less than eighty thousand pounds.

While M. de Nolhac's book is mainly concerned with the gardens of the Petit Trianon, he is very interesting on the subject of the little château itself, and also of the hamlet which was built at a later date to give an illusion of genuine country life to the surroundings.

It was inevitable, human nature being what it is, that after the ignoble death of its owner, the little estate should be despoiled and dishonoured. All the furniture and fittings, so simple and yet so tasteful, were dispersed or sold, and it was only by the strenuous efforts of the devoted Antoine Richard that the gardens themselves were not cut up and sold. He was obliged to submit to the transfer of his floral treasures to the Museum of Natural History, and to see the little park unguarded, devastated, and ruined. After a desolating period of neglect, Napoleon rescued the Little Trianon, and it was eventually refitted for his second wife, Marie-Louise. As to its present aspect, all who visit Paris can see it now in its restored condition. In the words of M. de Nolhac, "Enough of its detail still remains to show us the tastes of the age that created it, and of the people who lived in it. It needs little effort of the imagination to perceive the Queen in her morning gown leaning out of her chamber window . . . in the direction of the Temple d'Amour."

Of the translator's work we can speak highly; the diction runs smoothly and pleasantly; in very few places can any trace be found of the awkwardness which too often characterises a translation. The use of the word "actual" on p. 155, which should evidently be "present"; an allusion to "Ermononville," elsewhere rightly spelled; a too literal rendering of the word "simple" on p. 221; these are among the very few errors or infelicities to be found. A more serious ground of criticism is the lack of an index, always so desirable, if not essential in a work of this nature; perhaps we may be permitted to hope that in future editions this omission will be rectified. In any event, author, translator, and publishers alike are to be congratulated on a book of equal interest to historians and to horticulturists.

* *The Trianon of Marie-Antoinette.* By Pierre de Nolhac, translated by F. Mabel Robinson. London, T. Fisher Unwin Ltd., 1, Adelphi Terrace, W.C. 2. Price 12s 6d.

THE GARDEN IN ANTIQUITY.

XIII.—GLEANINGS FROM THE SANSKRIT.*

In these papers I have purposely avoided the beaten track, and have studiously left the books which others have written on garden craft unnoticed. This enables me to break new ground, and thus supplement, from independent and incidental sources, what others have said. So to-day we turn to the sources of Indian literature, and especially to the Sanskrit. If we can find in the poetry and folklore of bygone ages allusions to gardens, fruits and flowers, we may be sure that such things were familiar, and had been so for a sufficient length of time to enable poets and authors to use them for literary ends. Thus, as Professor de Gubernatis remarks—"If one finds in the folk-tales of

of Indra. We have, for example, Indra's flower, Indra's tree, Indra's grass and Indra's barley, to name only a few. Nor is it in books alone that such names occur. Indrayan and Indrafal are names which are in use to-day when the natives speak of the Colocynth (*Citrullus Colocynthis*). This plant is cultivated throughout India, and has been supposed by some writers to be the same as the wild vine of the Old Testament (2 Kings IV., 39).

In Kalidasa's poem "The Cloud Messenger," written some fourteen centuries ago, we read of the Magic Gardens of Heaven:—

Where lovers, rich with hidden wealth untold,
Wander each day with nymphs for ever young,

Enjoy the wonders that the gardens hold,
The Shining Gardens, where the praise is sung
Of the god of wealth, by choirs with love-
impassioned tongue.

objected to names of this description as they conveyed no information respecting the plant. It is a small tree (*Saraca indica*), with flowers which change from orange to red, and Sir W. Jones, who hoped that botanists would retain the early Sanskrit name *Asoka*, states that the vegetable world scarcely exhibits a richer sight than this tree presents when it is in full bloom. Some regard this as praise of too high an order, but the early poets were of his opinion. In the *Asiatic Researches* much of interest will be found respecting this tree, which has among its Sanskrit epithets that of *Anganapriya*, *c'est-à-dire*; *cher aux femmes*. The legend was that it would not blossom while grief filled the heart of its lady admirers.

"The favourite Bakul-tree" is also mentioned by Kalidasa as growing in Indra's garden. This is sometimes spoken of as the Indian Medlar

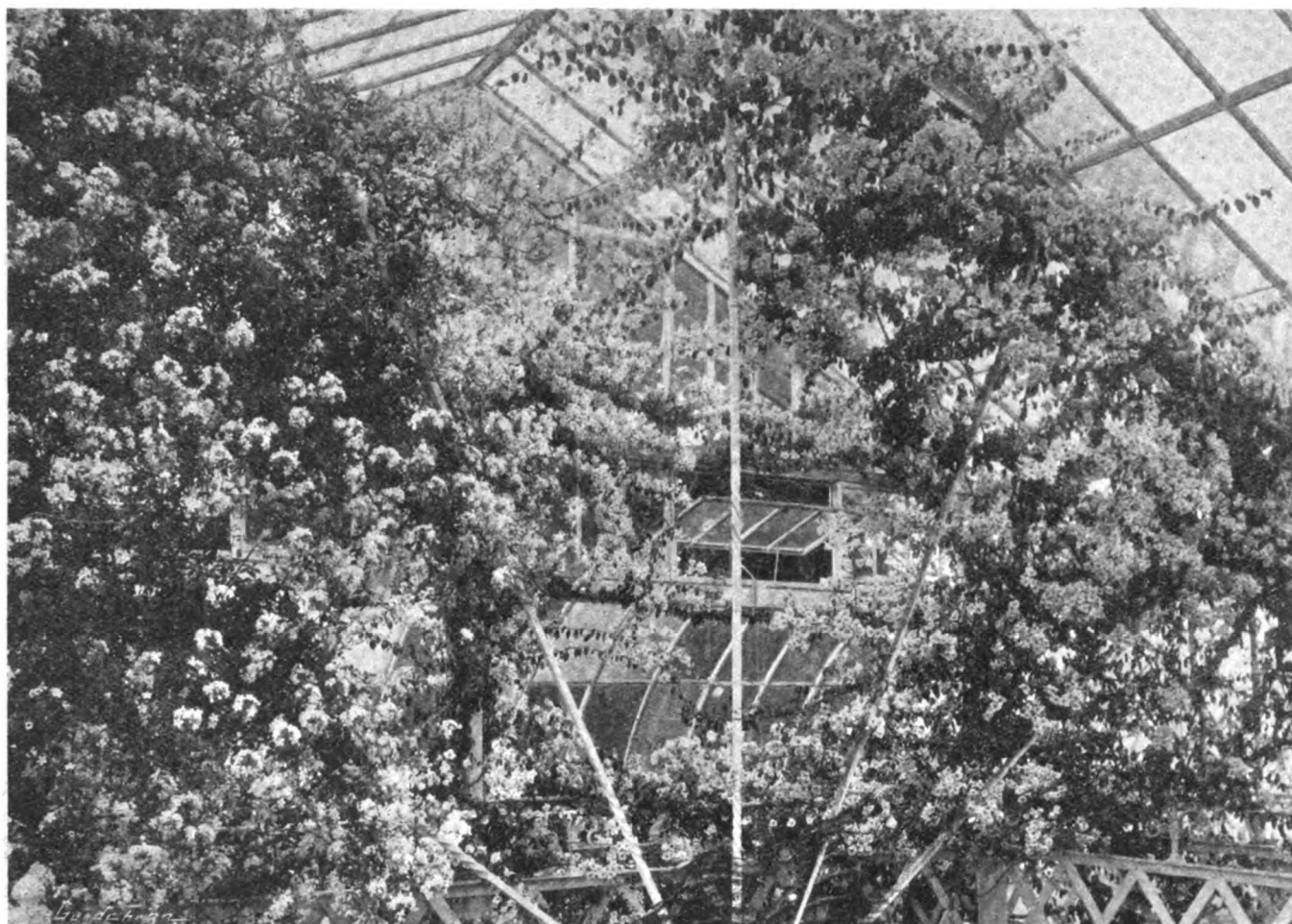


FIG. 126.—BOUGAINVILLEA GLABRA AND PLUMBAGO CAPENSIS IN THE CONSERVATORY AT CHORLEYWOOD CEDARS.

(see p. 300.)

India a reference to improvised fairy gardens one must usually understand thereby the sky under the name of the Garden of the Gods or Devodyana, i.e., deva-udiyana. In an ancient play entitled "The birth of the War-God" we read that Kumara came to Indra's paradise, but the gods who attended him were afraid to enter. Thereupon he led the way, and saw for the first time "with deep respect, the heavenly Ganges, Indra's garden and palace, and the heavenly city." This garden, as we have seen, was named Nandana, where grew a variety of flowers and fine trees. Many plant names indicate the character and popularity

We are able to gather from this poem the names of some of the favourite flowers of the people, since only these would find a place in the gardens of the gods, "round which the golden Plantain-hedges fit." And first comes the familiar Lotus. In paradise and in poetry the blooms may be golden, in terrestrial gardens and pools they are red, white and blue. The Sanskrit name is *padma*, but there are other names; and other plants such as the Hibiscus were so-called. "As Brahma sprang from a Lotus before the creation of the world, it may by some be considered the first of all vegetable forms." For much information on the mythology and folklore of the Lotus reference may be made to the *Mythologie des Plantes* of Professor A. de Gubernatis. Another plant which grew in the Paradise of Indra was the Asoka tree. It was formerly named Jonesia, but Sir W. Jones

(*Mimusops Elengi*), another name for which in Sanskrit is *Kesara*. This is a handsome tree though it grows to no great height. The oblong leaves are glossy dark green, and the flowers are white and fragrant; it is for this reason that it is still cultivated as it has been for ages past. Its popularity led to its being regarded as one of the chief ornaments of the Hindu Paradise. The same may be said of the Jasmine which, encircled with Amaranth, is mentioned with the foregoing Lotus, Asoka and Bakul by Kalidasa. The Arabian Jasmine (*Jasminum Sambac*), as Don informs us, was sometimes known in Europe as the Tuscan Jasmine, on account of its having been brought to Pisa from Goa. It has white blossoms and closely resembles the English favourite (*J. officinale*), spreading its perfume in the evening to a considerable distance. Several

* Previous articles on "The Garden in Antiquity" by the Rev. Hilieric Friend appeared in our issues for February 7; February 21; March 12; April 11; April 25; May 30; June 20; July 25; August 8; August 22; September 12; and September 26, 1925.

species of Jasmine are found wild in India, and others are planted in gardens as in olden days :—

The Asoka tree, with sweetly dancing lines,
The favourite Bakul-tree, are near the bower,
Of Amaranth-engirdled Jasmine vines :
Like me they wait to feel the winning power
Of her persuasion, ere they blossom into flower.

Milton, like Kalidasa, finds a place for the Amaranth in Paradise :—

Immortal Amaranth . . . which once
In Paradise, fast by the tree of life
Began to bloom, but soon for man's offence
To heaven removed, where first it grew,
there grows
And flowers aloft, shading the fount of life.

Allusion is made, of course, to the name, which means undying or immortal. To this genus belongs the Love-lies-bleeding (*Amaranthus caudatus*), and another species (*A. salicifolius*), which with other forms finds place in the gardens in Bombay and elsewhere on account of their brilliant foliage. Related to these is the Cockscorn (*Celosia cristata*), which is cultivated for the peculiar appearance assumed by the flowers.

"In Indra's garden there are flowers which, blossoming on earth at different seasons, are found in flower all the year round.

Where the autumn Lotus in dear fingers shines.
And Lodh-flowers' April dust on faces rare,
Spring Amaranth with winter Jasmine twines
In women's braids, and summer Siris fair,
'The rainy madder in the parting of their hair.'

Perhaps by "Lodh-flowers" we may understand the blossoms of the *Symplocos* (*Hopea racemosa*), variously known as Lodha, Lodhra, Lodra and Rodhra in the books and in present day speech. This (also called *Symplocos racemosa* or *S. Beldomei*) is a very beautiful tree, with a scent resembling that of Almond blossoms, while the bark is useful for dyeing. The species of *Symplocos* are, however, very numerous, and we cannot be sure which the poet had in mind. The *Siris* flower is often mentioned :—

Your body, soft as Siris-flowers,
Engages passion's utmost powers ;
How comes it that your head is hard
As stalks that Siris-blossoms guard.

I take this to be one of the *Acacias* (*A. Sirissa*), of which the number is very great. Among them was one which the early inhabitants of India employed for producing fire by friction, and to this they gave a great variety of names. Some of these have been collected by Professor de Gubernatis, who adds many interesting notes.

Madder flowers, again, are frequently mentioned by Kalidasa. He speaks of the Madder flowers that woke from dreaming, and made pain unendurable, and of the place where Madder bushes don their coat of bloom. Lilies, Mango blossoms, Roses, Apples and many other common and popular, or rare and costly flowers and plants, are found in the gardens of the gods as they are in the gardens of men, if our poets are to be believed. Here is a glimpse into the past :—

The vines that blossomed in my garden bowers,
That used to show their graceful beauty, when
Girls gently bent their twigs and plucked their flowers,

Are broken by wild apes and wilder men.

Compare it with another, and it will be evident that the love of the garden was great which the writer cherished :—

The wind blows gently as it can
To serve him as a soothing fan,
And dare not manifest its power.
Lest it should steal a garden flower.

One of the many translators of the delightful Hindu poet, Kalidasa, writes truly of him that "Rarely has a man walked our earth who observed the phenomena of living nature as accurately as he, though his accuracy was, of course, that of the poet, not that of the scientist. Much is lost to us who grow up among other animals and plants (than those of which he writes) ; yet we can appreciate his 'bee-

black hair,' his Asoka tree that 'sheds its blossoms in a rain of tears,' his river wearing a sombre veil of mist, his picture of the day-blooming water Lily at sunset :—

The Water-Lily closes, but
With wonderful reluctance ;
As if it troubled her to shut
Her door of welcome to the bee."

It seems strange that though this latter observation is so old, it should only have been within such recent years that the fertilisation of plants by insect agency was discovered.

If so much may be gleaned from one solitary author, what treasures may we not hope to find if researches are extended into the garden-lore of the past in India, as revealed by language and literature, mythology, folklore and art ?
Hilderic Friend.

HYACINTHS.

AMONG bulbous flowering plants few, if any, surpass the Hyacinth for beauty of form and colour, and when the flowers are fresh no plant can compare with it for fragrance. A well-grown spike of bloom, with the bells either closely set or loosely arranged, according to the variety, and from six to nine inches in length, is a thing of beauty, and whether the bulbs are grown singly in pots or planted several in a bowl they always attract attention.

Bulbs should always be procured from a reliable firm, and there will then be every chance of obtaining well-ripened specimens true to name. The best bulbs are those which have a clean, smooth skin, are weighty for their size, and firm. Mere size does not always count, as some of the finest spikes are procured from medium-sized bulbs.

So soon as the bulbs are received—and it is wise to order them early—they should be unpacked and laid out on shelves in a cool room or shed. In the meantime, procure some old fibrous turf, pull it to pieces by hand and discard all the finest material. Mix two parts of the fibrous loam with one part of decayed Oak or Beech leaves passed through a half-inch sieve, and one-part old hot-bed manure with a good sprinkling of silver sand and some fine charcoal. Turn the whole two or three times and allow it to lay a few days before use. Choose clean five-inch pots, and carefully crock them so as to secure ample drainage, for the Hyacinth resents stagnant moisture at the roots. Place some rough turf over the crocks and then about three parts fill the pot with the compost. Press the bulb into this fairly firmly, first sprinkling a little silver sand for the base of the bulb to rest on. Place more soil around the bulb, press it firmly but allow half-an-inch or so of space below the rim for subsequent waterings. The top of the bulb should be just level with the soil. Label each pot or pan as it is finished, and then stand the batch on an ash bed, and if the soil is on the dry side apply water through a rosette can, and let them stand a few hours before covering them. The best material for covering Hyacinths is sifted Coconut fibre refuse, and it should be worked in between the pots, and placed over the top to a depth of three or four inches. It is not advisable to use ashes for covering unless they are perfectly clean, and even then, the fibre refuse is far preferable if only because it lies lighter on the bulbs and is much cleaner to handle.

The earlier the bulbs are potted the better, as the pots should be well-filled with roots before they are removed from the covering. In about six or seven weeks examine the bulbs and remove to a cold frame any that are showing top growth and are well rooted. Keep them shaded for a day or two and then gradually expose them to the light, finally affording all the air and light possible. A week or two later the earliest varieties may be brought into a greenhouse with a temperature of about 50°, but no attempt should be made to force them in too high a temperature at first, or failure will result. The aim should be to secure a strong, sturdy plant with plenty of broad, healthy foliage, and the flower spike nestling

in the centre, ready to push up when more encouragement is given in the way of heat.

The best spikes and flowers are those which appear about March, under glass, from plants which have been grown steadily all the time, but, of course, there are many varieties that may be had in flower during January and February, and these are very valuable for house decoration during that period.

Well-rooted Hyacinths may be forced in a warm house, and so soon as the spikes are fully out they will require staking, as they are not so sturdy as those produced at a later date. Hyacinths should be neatly staked, and the best support is fairly strong wire carefully placed among the bells close to the stem, and inserted in the bulb just far enough to hold it firmly. No harm will result from this method, and the spike can be carefully tied to the stake with some fine raffia. The house should be kept fairly moist but water must not settle in the flowers or they will turn brown, and those at the top may fail to open. Keep the plants near the roof-glass at all times and the spikes will then be sturdy and strong.

A little stimulant applied during growth will help to improve the spikes of bloom ; either diluted liquid manure or a little artificial manure sprinkled on the surface and watered in will suffice. So soon as the spikes are fully developed remove the plants to a cool greenhouse or conservatory, lightly shading the pink and red varieties to preserve their colour. *R. W. Thatcher, Carlton Park Gardens.*

NOTICES OF BOOKS.

Garden Craftsmanship in Yew and Box.

This book* is from the pen of Mr. Nathaniel Lloyd, and the author presents in some 7,000 words his experiences in the formation and management of hedges and topiary work in Yew and Box, from the commencement with young plants to the mature hedge or fully-developed specimen. His advice on the formation of hedges suggests nothing that is new, but it is perfectly sound, whilst people interested in topiary work may glean a good deal of information from his descriptions and figures relating to the early training of various objects.

Probably the most interesting part of the work is the 54 full-plate photographs of hedges and topiary objects which are exceedingly well reproduced. However, a study of these photographs causes one to wonder why people will persist in giving up valuable garden space to mutilated plants of Yew and Box when there is such a wealth of attractive flowering trees and shrubs available for the out-door garden. This, however, is apart from the object of the book which in every way fulfils its object and can be well recommended to those people who see beauty in plants cut into fantastic shapes. The mechanical part of the work is excellent in every respect and the publishers have certainly presented the book in an attractive manner.

Adam's Garden.

This is the queer title of a little work on the cultivation of vegetables and small fruits by Mr. L. E. Fox† and, according to the author, Adam was, as the breadwinner, concerned principally with the raising of vegetables and fruits. The book makes no reference to the cultivation of flowers of any kind. The opening chapters deal with the situation of the garden, types of soil, rotation, manuring, and cultivation, in which most valuable information is given in a condensed form. The chief part of the book consists of cultural notes on different vegetables cultivated in this country, and such small fruit as Currants, Gooseberries, and Raspberries.

* *Garden Craftsmanship in Yew and Box*, by Nathaniel Lloyd, O.B.E. Published by Messrs. Ernest Benn, Ltd., 8, Bouverie Street, London, E.C. 4. Price 15/- net.

† *Adam's Garden: The Cultivation of Vegetables, Tomatoes, Rhubarb, and Small Fruit*. By L. E. Fox. Longmans, Green, and Co., 39, Paternoster Row, E.C. 4. Price 2/6.

BOSNIAN PRUNES.

THE growing interest shown in several European countries, more recently in England, for Bosnian Prunes, and the little that is known of Jugo Slavia and especially of the cultivation, preparation, commerce and exportation of its delicious Plums, induce me to pen a few notes on a food dainty of immemorial antiquity, unrivalled for lusciousness and wholesomeness. Moreover, by sketching in briefest outline the history and commercial development of the Bosnian Prunes industry I may prove useful in a general way and especially to the people in Jugo Slavia, than whom none are more hospitable, more tractable and more

letter he observes "These Syrian Prunes, which come to you enclosed in a cone-shaped basket, had they been larger, might have passed for Figs." These Plums were already well-known as "Damaskenon" in Greece, at the time of Alexander the Great, and appear to have been common in Rome after the military expeditions of Pompeius. In the year 1458 and 1463 Serbia and Bosnia were taken by Mohammed II, when the greater part of the population either embraced Mohammedanism or were forced into it. In the year 1878 both countries were freed from the Turkish yoke. Serbia was proclaimed an independent state, and Bosnia went under Austria-Hungary until the end of the great war, when, in 1918, it was united to Serbia, thus forming part of Jugo Slavia.

Bosnia and in Serbia for over four hundred years, especially south of the Save and Danube. A part of the population depends upon this fruit almost entirely for its living. At crop-time (August and September), Plums are their staple food, and the poorest invariably swallow the stones, the sooner to appease their hunger and thus eke out the fruit, which is gathered chiefly for sale, and represents their only income. Whilst the best fruits are dried and exported, many are used to make a kind of brandy—*Sljivovic* or *Rakija*; or are turned into jam—*Pekmez*.

AMERICAN AND FRENCH PLUMS.

About 1880, in Bosnia, large quantities of Prunes were pressed into barrels of about 150 to 200 kg. (300 to 400 pounds) and exported to Germany, whilst other lots of the "Mercantile" kind (smallest grading, without number), were packed in barrels of about 700 kg. (1,400 pounds), and forwarded to America. The last important export to America took place in 1893. By 1894, competition with the American fruit had begun, the latter developing during the subsequent years into the most formidable rival of the Bosnian fruit. About 1860, quantities of Plum pits were brought to California, where, under the best climatic and cultural conditions the seedlings were able to develop most favourably. Owing to the hot, sunny climate of California, the Bosnian Plums gradually lost their peculiar piquancy, producing a larger quantity of sugar, a thicker skin, and growing larger, with a rounder stone not freely detachable from the flesh.

The French who, after the Romans, were our masters in the cultivation, curing, preserving and packing of Plums, still hold in this field the first position in the world. The French Plum is in character and taste more or less the same as the Bosnian. In France the best known varieties are the *Prunelle*, *St. Catharine*, and *Prune d'Ente* (*Prune d'Agen*), noted especially on account of their excellent flavour and keeping qualities.

Roumania and Bessarabia harvest about 1,000 tons of export fruit yearly. The drying



FIG. 127.—BRČKO, BOSNIA; THE CENTRE FOR THE EXPORT OF PRUNES.

willing to establish a good reputation and ensure a proper and sound business development.

Figure 127 gives a view of Brčko, one of the export centres for Prunes in Bosnia, a most interesting place, inhabited by over fifty per cent. of Mussulmen with their old, picturesque, unchanged customs. For centuries this country has been forced into a state of lethargy, but although its culture is primitive, the natural intelligence of its people is very high, and no doubt before long it will become an industrial and commercial country of considerable importance.

In ancient geography, Bosnia and Serbia were part of Illyria. In Roman times these countries formed part of the Province of Pannonia. At the beginning of the first century A.D., under Julius Cæsar, Bosnia was united to Dalmatia, whilst Serbia formed part of the Province of Moesia Superior. During the fourth and sixth centuries, these countries passed to the Huns, East Goths and Longobards. In the year 638 a Slavic race, the Servians, settled in this region, and caused it to be called Serbia, the appellation including, besides modern Serbia, Bosnia and Montenegro. In the ninth century the Magyars settled down in Hungary, the adjoining country to the north of Serbia, and, according to legend, introduced the Plum tree, which is supposed to have come originally from Turkestan. In some parts of Bosnia, the Plums are still called the *Madzarica* (from Magyar). Ancient botanists and horticulturists mention the existence of Plums in Europe over two thousand years ago. Already in the first century A.D., Pliny the Elder wrote of the immense quantities of Plums known in his time: *ingens turba prunorum*. The ancients cultivated Plums of large size, dried them from time immemorial, prized them for their laxative properties, and used them for culinary and medicinal purposes.

At the commencement of the Christian era Martial, writing to a friend of Damascene Prunes (the name Damascene is derived from Damascus, a city in Syria), asks him to "accept these foreign Prunes, wrinkled with age; they are of excellent laxative qualities." In a further

"Plum" is the name given to the fresh fruit of a Plum tree, the term "Prune" being applied to the dried fruit. Prune is derived from the Latin word *Prunus*, and this from *pruina* (frost),



FIG. 128.—A PRIMITIVE BOSNIAN FARM DURING THE PREPARATION OF PLUM JAM.

because the fruit is covered with whitish or bluish bloom not unlike frost or meal; or, again, from *brunus*, because many are of this colour. The title of *Prunus* is now a generic one, and includes all species of Plums.

Notwithstanding that the output of Prunes is greater in Serbia than in Bosnia, yet, in trade, the title of "Bosnian Prunes" is generally used. There is no real difference between a Bosnian and a Servian Plum, therefore I prefer to use the better-known name of Bosnian Prunes. Besides, they do not differ in quality, and with regard to the trade it is obvious that the same kind of Prune is exported from both regions, the two forming one geographical unit. Plums have been grown in vast quantities both in

stoves of the peasants there are still so primitive that the dried fruit acquires an unpleasant taste of smoke. The fruit is very small. Bulgaria and Macedonia produce still smaller quantities, but of good taste and keeping qualities.

TRADE DEVELOPMENT.

Under Turkish Dominion, Bosnia and Serbia, having no intercourse with adjoining countries, were for centuries unable to develop any foreign trade. However, during the occupation of adjoining Slav territories by Bonaparte's French troops, small parcels of Prunes were brought by Slav merchants to some of the small frontier villages such as Rajevoselo, Gunja, and

to the town of Ossijek. From these places the fruit came through several stages to Austria and Germany. Of course, at that time, there was neither grading of the dried fruit, nor *étuvage* (sterilisation) and appropriate packing. The trade began with fruit dried by the peasants in the most primitive way, and was not subjected to the various processes it now undergoes after being purchased from the peasants and growers. Some seasons produce large-sized fruits, others small fruits. The prices were not dependent upon the size (grading) of the fruits, but only on the richness or poorness of the crop. A heavy crop usually produces smaller fruits. The richest crop since 1878 was in 1894, of quite small fruit, but singularly enough, in 1898 the very fine crop consisted throughout of large-sized fruits. Very curious is the observation that during the last twenty years large-sized fruits have gradually decreased in quantity, especially the 60-65 to the 1-k. (54-59 to the pound), which are now obtainable only in very small quantities. After the occupation of Bosnia by Austria-Hungary in 1878, the trade developed well and in different forms.

In the past, during crop-time, competent business men came from Budapest and Vienna to all parts of Bosnia and remained there until the end of the season. Every one of these merchants had a store and kept a buyer (middleman or commissioner) who purchased the fruit at the markets direct from the peasants. These merchants began to sort the fruits according to size and quality and store them in different heaps. In the year 1882 a firm in Budapest discovered a mechanical Prune grader for the more rapid and accurate sorting of the different grades. After this, the Bosnian Prunes began to appear on the international markets, graded.

German and Austrian merchants were especially interested in the development and organisation of this trade, and their efforts were very successful. Before the great war they had the whole control, and bought almost the whole of the output of Prunes. The Germans also built a number of *étuvages* in their own country and had the reputation of being the leading international buyers and exporters, a position which they still hold at the present day.

Formerly the Prune season lasted in Bosnia only about three months after the crop, contrasting greatly with recent years in which the season has continued into April and later. Lately, the international preference to buy direct from the original country has been very marked, and some important firms in Jugo Slavia have made a great effort to secure a direct export by curing and sterilising the fruit in the best possible way with the most meticulous care. This has already produced good results and is developing into a first-class business. Dipping after the drying, or other objectionable processes, are not sanctioned by these establishments, a fact of no little importance to the consuming public. Some years ago Jugo Slavians combined and co-operative organisations were tried; the Germans and Austrians made such attempts but were unsuccessful. At present there are several banks which control a large part of the buying and exporting, and some of them have adopted accurate and much appreciated business methods. Their organisations have been developed by men of experience, and in their fundamental principles do not differ much from the splendid organisations of the United States of America, especially of California and the four states of Oregon, Washington, Idaho, and Montana.

METHODS OF PREPARATION FOR EXPORT.

Plums are dried either by spreading them on hurdles exposed to the sun, or on the floors of brick ovens. The former method is generally used in very sunny and hot countries (especially California, Australia, South Africa, etc.), except in unfavourable seasons. There are several systems for drying Plums in the sun, one of them is as follows: the picked fruit is washed in warm water; all the imperfect Plums are taken out and the remainder are sorted according to size. Next they are dipped in lye (a solution of alkaline salts from wood ashes),

to crack the skin, so that the heat of the sun may penetrate the pulp. After this, they are spread out upon long wicker trays or boxes and set in the sunshine for a week or longer to cure. Several times a day men stir them, rolling them over and over, so that they may be cured evenly on all sides. So soon as they are thoroughly dried they are collected into bins and stored at the packing house. After the rush of the picking and curing season they are again sorted, graded, packed in boxes and shipped to the markets. In Jugo Slavia Plums are dried in ovens, and sterilised through the *étuvage*. The first *étuvage*, or sterilisation and packing house, was built according to the French system by a French engineer in 1884 at Brčko. Since then many *étuvages* have been introduced into the country, which expedite labour and reduce expense.

Sterilisation is a process of heating to such a degree as may kill all micro-organisms and prolong the fruit's keeping qualities. The Prunes are generally put into the oven, already packed in cases, thus providing against further exposure to the air and contact with other micro-organisms, carried by air, ants, flies and other insects. The temperature of the oven varies, and the fruit is kept there between eight and twelve hours. Ordinarily, one sterilisation is sufficient, sometimes, however, a second is advisable.

In years when, during August and September, rain falls too abundantly the Plums are lacking in sugar and do not keep well. There was such a year in 1922. Luckily, such years have occurred only three times since 1886. In spring, the weather has a great influence upon the result of the crop; in 1919, frost destroyed the entire crop in Bosnia and Servia.

Stoneless Prunes (the stones are taken out by hand) are exported to northern Europe, especially Denmark. During the season 1923-24, the exportation of stoneless fruit was considerable. However, on account of the exorbitant rise of duty in Denmark at the beginning of 1924, all exportation there has suddenly stopped.

Plum jam (Pekmez) was prepared before 1914 in great quantities, amounting in some years to about 10,000 tons (one ton equal to 1,000 kg., or 2,204 pounds); it was exported mostly to Germany, Poland and Austria-Hungary. Fig. 128, taken in Bosnia twenty-five years ago, shows a primitive farm during the preparation and packing into barrels of the Plum jam. Since 1918 the jam consuming countries have taken strict measures to protect their products and develop their own factories by imposing heavy duties on all imported preserves. *Mario T. dell'Elmo*,

(To be concluded).

HARDY FRUIT GARDEN.

LARGE APPLES.

THE present season will long be remembered by gardeners and fruit growers generally for the size and quality of the Apple crop. In these gardens most kinds are much larger than usual. To mention a few: Blenheim Pippin, King of the Pippins, and Charles Ross are very fine and well-coloured. Cox's Orange Pippin, never a good grower here, has fruits much larger than usual and very clean; quite ninety per cent. will be fit for the table.

Amongst the cooking varieties Crimson Bramley is outstanding: many fruits of this variety are well over one pound each, gathered from trees carrying average crops. The size and brilliant colouring I consider is due to the intense heat during June and July. I remember we had a similar crop during the hot season of 1921, though not so pronounced. I have come to the conclusion that certain varieties of Apples need a hot summer to bring them to perfection, especially, I think, the variety Cox's Orange Pippin. I should like to know the views of other readers. *J. Yantell, The Manor Gardens, Ramsbury.*

MARKET FRUIT GARDEN.

THE September rainfall was above the average of the past ten years, 2.85 inches being measured at my place; but most of the rain fell on three days around the 21st, and the rest of the month was not so wet. It was possible to proceed with hoeing and horse cultivation with little interruption, and some useful cleaning work was accomplished. Cob-nuts were harvested and good progress made with the picking of Apples: but a gale on the 22nd unfortunately caused many windfalls. There is still almost a month's picking to be done before Cox's Orange Pippin, Allington Pippin, and heavy crops of Lane's Prince Albert and Bramley's Seedling will be cleared.

IMPORTED APPLES.

It is unfortunate that, just when the majority of growers are ready to sell their bulkiest crops and best varieties the market should be filled with imported fruit. Imports begin earlier every year; and the period during which we have our markets more or less to ourselves becomes correspondingly shorter. Here is an extract from a market report issued by a leading Covent Garden salesman for the week ending September 25: "Another week of unsatisfactory trading has to be recorded. Very large quantities of Apples are now coming from the United States, Ontario, British Columbia, and Nova Scotia, and low prices are the general rule. . . . The very large supplies of imported Apples have naturally affected the value of home-grown, and further have made sales very difficult to effect." This state of affairs is very discouraging to home-growers in a season when Apples are, in most cases, the only satisfactory crop. We are often blamed for marketing varieties before they are mature, but it seems to be the only way to avoid glutted markets and low prices.

APPLES IN BOXES.

Growers who have been enterprising enough to pack Apples in standard bushel boxes have had good reason to congratulate themselves this season, as these have realised substantially higher prices than fruit forwarded in the usual half-bushel baskets. Generally speaking, the extra price has been in the neighbourhood of 4/- per bushel in the case of dessert varieties. This satisfactory result is due partly to the fact that only a small proportion of the crop in many districts is of high enough quality for boxing: but it also indicates the increasing popularity of the non-returnable box amongst buyers. The packing stations, three of which are now working in England, are bound to do much to popularise the box; and growers who do not wish to be left behind will do well to familiarise themselves with the method of packing in boxes. Now that the diagonal packs are the only ones used there is really little to learn, although a good deal of practice is required before speed is attained. It is a very much more difficult matter to grow crops in which a large enough proportion of the fruit is good enough for boxing. Up to the present I have only boxed a fraction of my crop every year, because my principal market is a local one in which Apples in boxes have not hitherto been appreciated. This year, however, boxed fruit from one of the packing stations has appeared in this market: so I have little doubt that ultimately I shall have to follow suit. So far as expense is concerned, there is little to choose. Boxes are rather costly, it is true; but salesmen reduce their commission when dealing with fruit in non-returnable packages, and the expense of carriage of returnable empties is avoided.

COOKING OR DESSERT APPLES?

When working out some figures for the Census of Production recently I found that my plantations of Apples are composed of about sixty per cent. dessert varieties and forty per cent. cooking. This is probably unusual. On the majority of fruit farms, I think, the proportion would be the other way about. On some, in fact, Worcester Pearmain is the only dessert variety grown, because it

is considered to be the only reliable cropper. The question arises, which are the more profitable? Weight for weight, of course, dessert Apples are nearly always the more valuable; but the cooking Apples gain enormously in bulk of crop and reliability. They are also less expensive to grow because they require less attention in the way of pruning and spraying. There are fruit farms which consist mainly of Bramley's Seedling and Lane's Prince Albert; and it must be confessed that the idea has attractions. A very heavy crop, at any rate in alternate years, may be relied upon almost as a certainty, there is little risk of loss through scab, and not much trouble with insect pests in most seasons. For all that I prefer the more speculative and difficult business of growing dessert varieties mainly. If only the trees can be kept healthy, and a good, clean sample produced, the fruit is always saleable at a fair price, whilst exceptional samples are worth a good deal. Really, however, it is a matter of soil and situation. On some heavy land dessert Apples do not colour well and are liable to grow too big; but cooking Apples grow to a size and substance that are seldom seen on light land. Mine, however, is a light soil, capable of producing dessert Apples, including Cox's Orange Pippin and Beauty of Bath, with exceptional colour and finish, if only scab can be controlled. There is little doubt that there is a good deal of light land, not generally considered to be suitable for Apples, which can be made to grow fine dessert fruits. The Hollesley Bay Labour Colony, in Suffolk, which gains so many awards at commercial fruit shows, is an example of what can be done on soil which is little removed from absolute sand. What it comes to is this: Dessert Apples pay better than cooking Apples on soil where they can be grown well, but not elsewhere. It is important, when planting fruit commercially to obtain all possible local information as to what is likely to succeed.

LEAVES HANGING LATE.

In my district the leaves are hanging late on fruit trees and bushes, this being particularly noticeable in the case of Plums and Black Currants, which, with me, are often defoliated quite early in autumn. Most growers, I have found, consider this to be a good sign, telling in favour of next year's crops; and I agree. It indicates, I suppose, that there are plenty of nitrates and other soluble foods made available in the soil during the summer, and that the trees are using these to complete the development of fruit buds. A late leaf-fall, however, would seem hardly to tally with the ripening of wood on which many gardeners place so much importance.

THE PLANTING SEASON.

The season for planting fruit trees and bushes is drawing near, and the anxiety of nurserymen to obtain orders shows that there is no lack of material. Evidently the nurseries have recovered from the depletion of stock suffered during the war. The wonder is what becomes of all the thousands of fruit trees sold every year. It is quite clear that a large proportion of them never reach bearing age, or else the acreage under fruit in the country would increase by leaps and bounds. As a matter of fact, the Agricultural Returns of the current year show a decrease of 1,500 acres under orchards as compared with 1924. A certain amount of grubbing of old orchards is done, of course, especially in the south-west of England, but nothing like enough to balance the planting that goes on every year. It seems impossible to escape from the conclusion that thousands of young trees fail through bad planting and neglect during their early years. Planting in narrow holes dug in grass land, examples of which can be seen in all districts, undoubtedly seals the fate of a great many trees. It is curious that this should still be done after all that has been written about the fatal effect of turf over the roots of newly-planted trees, particularly when, as is often the case, it goes hand in hand with entire neglect of pruning.

MANURING BEFORE PLANTING.

It is commonly advised in books that no manure should be applied when planting fruit trees, unless it be a light mulch after the operation is completed. This caution is no doubt necessary where planting is to be done in garden soil rich from much previous manuring; but it is a different matter where trees are to be planted on a commercial scale on land that has been treated under ordinary farming conditions. In such cases a good dressing of farmyard manure should generally be ploughed in when preparing the land, unless the previous crop was very generously treated. Ideal conditions are afforded where the land is sub-soiled and well manured with both dung and chemical fertilisers for a crop of Potatoes before the trees are planted. It should then be both clean and rich in plant foods, so that the young trees stand every chance of making a good start. There is much less danger of newly-planted fruit trees making too rank growth in an open plantation than in an enclosed garden, largely, no doubt, because they are less sheltered. *Market Grower.*

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. (111-116).)

(Continued from p. 296.)

ENGLAND, S.W.

SHROPSHIRE.—Fruit trees flowered with the greatest profusion, there being every indication of record crops, but a succession of cold, easterly winds and frosty nights deprived us the pleasure of thinning the fruit. The trees are clean and in a healthy condition, and making good growth. Gooseberries were an exceptionally heavy crop and the berries of good quality. Strawberries suffered through the continued heavy rains, our soil being a heavy retentive loam resting on clay, and the natural drainage is bad. *Roger F. Jones, Oteley Hall Gardens, Ellesmere.*

—The fruit crops generally are very disappointing. There was a good show of bloom, but the flowers did not seem to possess much substance or stamina and failed to set freely. The inclement season further affected them, whilst aphids, caterpillars and other pests further weakened the trees. The hot, dry spring very adversely affected the Strawberry, Raspberry and small fruit crops generally. Our best cropped Apples are Warner's King, Bismarck, Allington Pippin and James Grieve. *E. F. Hazellon, Yeaton Peverey Gardens, Bomere Heath, Shrewsbury.*

WORCESTERSHIRE.—The fruit crops are very disappointing, owing chiefly to the extremes of cold, wet weather, before and during the flowering period, followed by an intensely arid drought. Apples, Pears and Plums flowered profusely, and although there was no frost at night to injure the bloom the flowers failed to set and dropped wholesale. It is my opinion that the cold, sunless season of 1924 which had failed to perfect and ripen the delicate organs within the embryo buds of the fruiting growths upon the trees must be held responsible for much of the failure. Aphids and other insects have given much trouble to combat, and silver leaf is rampant amongst Plums in this county. *William Crump, V.M.H., Oakridge, Malvern Link.*

—The fruit crops are below the average. The Pear crop in these gardens is the worst we have had for many years; Black Currants and Raspberries have been plentiful and the quality good; the Apple crop is much under the average, although certain varieties are carrying good crops, viz., Charles Ross, Cellini Pippin, Lord Grosvenor, Lane's Prince Albert and James Grieve. *Ernest Avery, Finstall Park Gardens, Bromsgrove.*

—We have poor crops of fruits. Apples are about half-a-crop. Worcester Pearmain, Cox's Orange Pippin, Charles Ross, and Blenheim Pippin being some of the best cropped varieties. Pears are a failure; Plums were about a quarter-of-a-crop, and the fruits on the small side owing to the trees being so blighted in spite of spraying. Small fruits were very good, but Raspberries were small for the want of rain. Strawberries were soon over from the same cause. Our soil is rather heavy, and the spring being so wet, was cold and unworkable for a long time. *C. A. Bayford, Davenham Gardens, Malvern.*

WALES.

CARDIGANSHIRE.—All kinds of fruit trees bloomed most profusely in this district, but, because of the early cold rains the crops of some varieties are much below the average. The following varieties were the best cropped Apples:—Warner's King, Annie Elizabeth, King of the Pippins, Worcester Pearmain, Charles Ross, Gladstone, Edward VII, Lord Derby, Duchess's Favourite and Allen's Everlasting. Pears: Williams's Bon Chrétien, Jargonelle, Doyenné du Comice, Conference and Clapp's Favourite. Plums: Monarch, Early Rivers, Czar, Pond's Seedling, Victoria, Coe's Golden Drop and Gage Plum. The trees are making clean, satisfactory growth. The soil is heavy and wet, overlying slaty rock. *W. Phillips, Derry Ormond, Llangybi.*

—All fruit trees flowered well. Damsons were promising, but many of the fruits failed to set. No frost was recorded during the period these trees were in flower. Pears, like the above, failed to set well, and we have only half the average crop of these fruits. Apples are very scarce. Gooseberries were plentiful; Raspberries an average crop, as also were Red and White Currants. Black Currants were only moderate, owing to the ravages of bud-mite. The soil is a medium loam resting on gravel, but wet and sour owing to its position. *D. H. Dunn, Hafod, Pontrhydygroes, Ystrad Meurig.*

CARNARVONSHIRE.—All fruit trees blossomed profusely, especially Pears, but hail and frost completely ruined the crops. Apples failed to set well. Small fruits were good. The spring drought was the cause of the shortage of Strawberries. Our soil is very light with a gravelly sub-soil. The rainfall for the month of June was .04 in., the lowest on record here. *J. S. Higgins, Glynllivon Gardens, Llanwnda.*

DENBIGHSHIRE.—After a really wonderful show of fruit blossom which promised heavy crops, Pears, Plums, Peaches and Apples failed to set. This was, I think, in the first place, due to lack of sunshine during the previous year, and similarly in spring while the pollen was ripe, the weather of spring being dull, and there were few pollinating agents. The sun failed to give its warmth until the middle of May, when from the 14th to the 17th the temperature rose above the normal; on the latter date the thermometer reached 81°. No particularly sharp frosts were experienced with the exception of April 4, when 10° were registered. This did not appear to do much harm, the flowers being dry on this occasion. Winds prevailed for the greater part from the N. and N.E., and fruit trees made very little growth. Insects, such as Apple aphid, Pear midge and caterpillars were much in evidence. Small fruits were, on the whole, particularly good, also Strawberries, excepting in a few cases, where the soil is light or shallow. The soil is, for the most part, somewhat on the heavy side. *R. H. Crockford, Horsley Hall Gardens, Gresford, near Wrexham.*

—The fruit crops are very disappointing. Apples, Pears and Plums are very thin but small fruits were plentiful, especially Strawberries and Raspberries which were of excellent quality. The soil varies from gravel to stiff clay. *J. A. Jones, Chirk Castle Gardens, Chirk, near Wrexham.*

(To be concluded).

FRUIT REGISTER.

THREE GOOD APPLES.

I SHOULD like to pay my tribute to three varieties of Apples which have served me well during the present year and whose behaviour in all years has been satisfactory. In my judgment, any gardener may confidently plant them whether he be engaged in private or commercial practice.

The first is Ben's Red, a dessert variety of very attractive appearance and excellent flavour. It is a first-class dessert Apple of medium size. My trees are on the Paradise stock, and they make very sturdy growth.

The most cautious grower would have a word of praise for James Grieve, a comparatively modern dessert variety. I believe it is a seedling

Swida Root.



FIG. 129.—WILDE KOOLE, BRASSICA OLERACEA LINN.

(From the *Herbal* of Dodonaeus.)

whose parentage is unknown, but there can be little doubt that one of its parents was Cox's Orange Pippin. The comely fruits are of medium size, and the ground colour of yellow is pencilled with red. I was pleased to note that Mr. H. Dunkin, Horticultural Superintendent to the Warwickshire County Council records James Grieve as the most profitable variety, over a period of seven years, on his well-managed fruit plot at Hatton.

Stirling Castle is a most consistent bearer, and an Apple with first-rate culinary qualities. My trees have been laden with fruit this year. The round fruits are of medium size. It so happens that I have bush trees on the Paradise as well as on the Crab stock. The fruits on the latter stock are the best, though those on the former stock are quite remunerative. Geo. H. Copley, N.D.H.

VEGETABLE GARDEN.

THE CABBAGE.

(BRASSICA OLERACEA, LINN.)

IN bringing to a close my consideration of the various members of the Brassica family, with an account of the history and use of what is universally admitted to be the most important of all, the garden Cabbage, it may be of interest if I dwell for a brief space upon what is generally accepted as the parent plant, viz.: Brassica oleracea of Linnaeus, and according to Dodonaeus, Crambe agria in Greek; Brassica sylvestris or rustica in Latin; Brassica marina of Dioscorides; and, in Brabantsch, Wilde Koole.

The illustration from Dodonaeus's *Herbal* (Fig. 129), gives a very good idea of a plant which is to be found on the seashores of Europe, Britain included, and western Asia. It is the accredited parent of the Borecole, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Kohl Rabi's, and Turnip-rooted Cabbage or White Swede. As regards the last, considerable differences of opinion exist amongst botanists, some of whom hold that the White Swede has been derived from Brassica campestris: this question will be fully considered under another heading later.

Brassica oleracea is a hardy perennial with bright yellow (occasionally white) flowers which emit a pleasant odour attractive to insects, and are followed by narrow pods containing small round seeds so beloved by birds that it is not often possible to secure a fully ripened pod. In its green state the plant has some very objectionable qualities of taste and smell, but these have in the main been eliminated in the garden varieties. By whom or when the work of development was first taken in hand it is not easy to determine as at the first recorded appearance of the aforesaid developments they were far removed from the parent variety.

In his *Herbal* Dodonaeus inserts an illustration of a seedling branch of another variety of "Wilde Koole mit bladeren van Doorwaas," of which the leaves are broad and perfoliate, as the name implies; the flowers are white, and the seed pods quadrangular. It is named in Latin Brassica sylvestris perfoliata; other names are B. campestris and B. montana. It was known to Clusius, and is said to be of Spanish origin. Two hundred years later Miller quotes from *Tournefort's Corollary*: Brassica orientalis perfoliata flore albo siliqua quadrangula; Eastern perfoliated Colewort with a white flower, and quadrangular pod; and states "This sort is fit for a Botanic Garden, but is a plant of no use. It is an annual." All efforts to obtain seeds of this variety have been unsuccessful.

Having to the best of my ability disposed of its parentage, I come now to a consideration of the common cultivated Cabbage itself which may justly be regarded as the *doyen* of esculent vegetables, so far as the eastern hemisphere is concerned. This brings us to the *Herbal* of Dodonaeus, written in Brabantsch and published about 1559, in which the genus Brassica is very fully treated, no fewer than ten species being illustrated and described. Availing myself of Lyte's translation of the French Translation made by Clusius—an admirer of Dodonaeus and his work—first comes the *description*. "The first kind of white Coleworts is the common white losed or close Cabbage which hath great large leaves, full of grosse veins, ribs, or sinewes, whereof the first leaves before the closing of the cabbage, are of a white-greene colour, but the others following next under them are as white as snow, the which do grow so closely laid and folded hard with and upon another that they are like to a great globe or round bowle. These Coleworts (winter being gone and past) do spread abroad by unfolding themselves, and so bring forth flowers and seed as other Coleworts do" (Fig. 130). All these Coleworts are planted in gardens of this country. The Names come next: "The first kind of white Colewort is called in Latine (of Plinie)

Brassica Tritiana, of the writers in our days Brassica sessilis, capitata and Imperialis; in French, Chou cabus; in English, White Coleworts, losed Cabbage, and great round, Cabbage Cole." The next point is the *Nature*: "Coleworts are hot and dry in the first degree, and of a cleansing or scouring facultie, especially the red kindes. The following are some of the virtues:—The juice of Coleworts drunken with wine is good against the bitings of serpents. The same put up into the nostrils purgeth the braine and head. The young leaves eaten raw in vinegar, taken after meat or meale, do cure drunkenesse, and the headach proceeding of the same." Lastly, *The Danger*: "Coleworts eaten ingender grosse and melancholic ideas, especially the red kind, the white are better to digest especially when they have been twice boyled."

The Colewort figured above is the only Sluijt or heading white Cabbage mentioned by Dodonaeus, but referring to the name given to it by Pliny, Brassica Tritiana, I find that it is

Rabys Koole, of Sluijt Koole.



FIG. 130.—SLUIJT KOOLE OR HEADING COLEWORT

(From the *Herbal* of Dodonaeus.)

also applied by him to a red Cabbage very similar in form, of which more later. Pliny appears to have been in the habit of giving the name of a district to each separate variety, thus B. Pompeianum, B. Sabellium, etc., we may infer therefore, that the variety was either developed in or was more popular in the district whose name it bore. In this case I have not been able to fix definitely the exact position of Tritian, but am of opinion that it was one of many small districts in the environs of Naples. The following extracts from Ainsworth's *Latin Dictionary* may throw some light on the subject: "*Brassica capitata*, Cauliflower, Cabbage, Plin. *Crambe*, a kind of Colewort, Plin. (Theophrastus also named the Cabbage *Crambe*). *Tritianus*, a. um. adj.: Tritiana brassica, quod triplo major est aliis. Book 19, cap. 8, a kind of a large Caulwort, Pliny, that is three times larger than any other." From the last clause (a free translation of Pliny's Latin description) it may be inferred that other esculent Brassicas of

different sizes (and perhaps other forms) were in existence when Pliny wrote.

Ainsworth, in quoting Phyllon, also from Pliny, considered it was a kind of leafy herb and suggests that it was Knapweed, but to the writer it is much more probable that it was some kind of Cabbage which answers better to the description; further, it would also be known to Pliny that Theophrastus in his treatise on plants named one of the Brassicas *leiophyllon* that is, smooth-leaved Brassica.

As a final word, it would not be impossible for conical and flat varieties to be developed from the form illustrated in Fig. 130. Theophrastus, 320 B.C., one of the earliest writers, mentions three Brassicas, Curled Kale, Effen and Wilde, but does not mention the heading variety. It may not have been in existence in his day.

Dioscorides, physician to Antony and Cleopatra, mentions two kinds, the cultivated and the wild, and Cato, about 200 B.C., who wrote *De Re Rustica*, named three, one of them had great smooth, broad leaves, and another was the *Gechronkelde* or Curled Kale.

It is singular that there is no mention of Cabbage or any other Brassica in the Bible. Are we to infer that they were not known to the Egyptians? King Solomon, 1014 B.C., is one of the earliest botanists of which we have any definite record for "he spake of trees from the Cedar that is in Lebanon to the Hyssop that springeth out of the wall" (1 *Kings*, IV, 33), but does not mention this valuable food. S. B. Dicks.

(To be continued.)

HOME CORRESPONDENCE.

Training of Young Lads in Horticulture.—The subject so ably dealt with by Mr. W. Pettigrew (see p. 270) is one dear to the heart of every real gardener. Mr. Pettigrew has dealt so minutely with the matter, that one might be inclined to think little more can be said about it, but as the present-day training of lads is the key to the future of gardening, an exchange of ideas on the subject cannot fail to be of service to horticulture generally. I am afraid we gardeners, on the whole, are inclined to be too exacting and to expect too much from the present-day young man; our store of knowledge, gained by long years of experience may handicap us in getting down to the needs of youths entering the profession; everything is so obviously clear and easy to us that we fail to appreciate in a real sense many of his difficulties. It may appear to us that the young man of to-day has such splendid opportunities of gaining knowledge and fails to take full advantage of them; but is this really true? I think not. It is very difficult to compare present-day conditions with those prevailing twenty or thirty years ago, but with considerable knowledge of the conditions of both periods, I suggest that, broadly, the young man of to-day does take advantage of these facilities, and that his capabilities will compare favourably with those of the youth of the earlier period. Mr. Pettigrew's discovery of the young man who lacked "practical" experience is a very unfortunate one, and it certainly does not represent the capabilities of the average young man of to-day. Further, I can conceive it possible that plenty of young men with eight years' "practical" experience in general gardening, including Orchids, would accept a package of Orchids and know how to treat them, even if they did not understand the technical terms "terrestrial" and "epiphytal." This, I maintain, adds to the unfortunateness of the example chosen. It is very true that to become a successful gardener the lad must have a natural love for the work, and I am proud to say that we still have lads of that sort following the vocation, as proved by the questions I am sometimes asked by them. To be physically robust and strong is an invaluable asset to every man in gardening as in any other walk of life, but why it should be almost essential that the successful garden craftsman should have a

so-called "good physique" is beyond my comprehension. The interpretation of "good physique" may be open to a divergence of opinion, but the usually accepted idea is that it applies to a person well up to or beyond average height and build. Fortunately, these attributes are not governing nor even essential factors in the production of men of first-rate capabilities and attainments, and probably many of the most successful gardeners of our day are men of so-called poor physique. It may be possible that good physique is an asset to aspirants for public appointments, but if men of superior attainments and exceptional abilities are turned down because of apparent poor physique it is distinctly to the disadvantage of the public services, and the sooner those in authority train their minds to a broader outlook the better it will be for these services. That private gardens are the finest training grounds for the production of the best type of practical gardeners is indisputable. Probably nine-tenths of public appointments are obtained by men trained in private establishments, and the nursery trade draws from the same field to a not inconsiderable extent for men of superior calibre. It is my firm belief that this will continue. Excellent as the curricula may be in many of our institutional training centres, and desirous as the student may be of taking full advantage of the facilities offered for gaining knowledge, the atmosphere is not so favourable to the gaining of general all-round knowledge as that existing in first-class private establishments. This difference is vital, for the concrete results obtained in the production of high-class material is more inspiring than the more abstract results obtained from passing certain tests in a given time. After a period of training in a private establishment it is undoubtedly of great benefit to every young man to spend a few years at an institutional training centre, but whole-time training in these centres should be reserved for specialists. W. Auton.

Missing Butterflies.—I was very much interested by Mr. S. B. Dicks' note on missing butterflies (p. 252). I have noticed the absence here of the Admiral and Peacock butterflies, because usually we have a great number in these gardens, and their brilliant colours add to the charm of the autumn as the insects flit from flower to flower. In previous years they have been especially beautiful on Michaelmas Daisies, which they seem very partial to, and it has been a wonderful sight to see the brilliant Admirals on a border of yellow Chrysanthemums, a sight not to be forgotten on a sunny day. We have a number of Buddleias here which have bloomed profusely this year and are generally attractive to butterflies. The common white butterfly (of which we usually have swarms) are also scarce this year. Are the wet autumns of the last two seasons responsible? W. G. Warner, *The Gardens, Chicksands Priory, Shefford, Bedfordshire*.

—Like your correspondent, Mr. S. B. Dicks, (p. 252), I have noticed the scarcity of the Admiral and Peacock butterflies this season. We have some very fine specimens of Buddleias of the *variabilis* varieties in these gardens which have always been visited by large numbers of these two kinds of butterflies, in fact, it was not uncommon for them to come and settle on anyone standing quietly watching them. I think these bright-hued butterflies make one of the prettiest pictures in the autumn garden. Is it possible that this scarcity is due to the continued wet weather of last year? I did not notice any hibernated insects during last spring, although there were plenty of caterpillars feeding during the summer of 1924. It would be interesting to know the opinions of your correspondents, for I cannot remember such a scarcity, in fact, total absence of these beautiful insects for many years. F. P. Dickson, *Humbercombe Manor Gardens, Taplow*.

—Like Mr. S. B. Dicks (see p. 252), I have missed the Admiral and Peacock butterflies this season, for up to the present I have not seen one. Last year they were very plentiful, and a fine sight they were upon *Sedum spectabile* as well as upon some of the

fallen Pears. There were one or two about in the early spring, which had hibernated during the winter. I am afraid it is too late now for many to be seen. A. Wilson, *Hadley Bourne, Barnet*.

Control of Slugs.—With reference to the note on this subject at page 243, a poison bait of bran and Paris green is no doubt an effective method of destroying slugs, but I fear it would destroy a good deal more than the slugs. What about the birds? How many of these would be killed? And probably some of the most useful kind, too. Paris green is a deadly poison, and its possibilities in the destruction of life are great. As I pointed out in *The Gardeners' Chronicle* of January 3 (Vol. LXXVII, p. 14) and May 30, 1925 (Vol. LXXVII, p. 376), there is nothing more effective and safer to use for the destruction of slugs and snails than ordinary alum, and it may be applied in any scale, great or small. It may be used in saturated solution, either to water the ground or spray the plants with, without risk of damage, and a hot, saturated solution applied to rubbish heaps and other haunts of the pests, where there are no plants to injure, will exterminate every adult and egg it comes into contact with. Its preparation (in solution) is of the simplest description, and there is nothing in it to clog the nozzles of syringes or do them any harm whatever. It may also be used in the powdered state for the protection of isolated plants in slug-infested ground. I am surprised at people worrying over such materials as sulphate of aluminium, poisons, trapping, etc., when they have such a simple, otherwise harmless, and cheap and effective substance as this ready to hand. A. D. Richardson, *Edinburgh*.

Viola bosniaca.—In your issue of September 12, in "Notes from a Welsh Garden," I see that *Viola bosniaca* was not a success with Mr. Johnston this year. It failed with me two years ago, but I was so captivated with it that I procured another plant from the nurseryman last spring. Noticing the plant was throwing up numerous young growths I cut them off and inserted them in a couple of four-inch pots. They rooted freely in a frame, and I planted them out on a flat ledge in the rock garden. Here they grew very freely and flowered continuously during May and June. After the autumn rains they recommenced flowering and are still providing one of the bright spots in the rock garden. A. Graham, *Bellevue Gardens, Belfast*.

Large Trees.—It may be of interest to your correspondent G. H. E., and to other readers, to know of a very fine Tulip Tree (*Liriodendron tulipifera*) in the gardens at Poppleton Hall, Yorkshire; it is fully seventy feet high and has a bole girth of ten feet at the ground level. In the same gardens there is a *Wistaria sinensis*, trained on the walls in an horizontal cordon fashion; this has a spread of fully forty yards, and never, to my knowledge, has it failed to produce a wealth of bloom. E. D. Deighton, *Red House Gardens, Blidworth, Notts*.

Calcium Cyanide as a Fumigant.—(See p. 275). W. E.'s experience with calcium cyanide is the opposite of mine. I tried it on a house of mixed plants that were infested with white fly, which I find very difficult to deal with here, as many plants outside are infested with it, and the pest continually enters the houses. I used a quarter of an ounce of calcium cyanide to the 1,000 feet of cubic contents of the house. The plants were kept on the dry side and no water was used in the house after the early morning, except sufficient to slightly damp, not wet, the floor. The house was fully ventilated until it was cyanided then it was closed to cause the temperature to rise to about 65°. In the morning I found the house was thoroughly cleared of the fly. I think calcium cyanide is going to prove a first-rate fumigant, although I was prejudiced against it at first, but I intend to give it a thorough trial over a fair period, as it seems to me to be simple to use, effective and economical. Evan G. Jones, *Shalesbrook Gardens, Forest Row, Sussex*.

SOCIETIES.

READING AND DISTRICT GARDENERS.

THE first fortnightly meeting of the Autumn Session was held in the Abbey Hall, on Monday evening, September 28, when there was a large attendance presided over by the President, Mr. Frank E. Moring. The subject for the evening was "Onions," and the lecturer, Mr. A. J. Cobb, Lecturer in Horticulture to the Reading University College. In his introductory remarks Mr. Cobb referred to the extensive trials of Onions carried out at Shinfield, and from these a most interesting exhibit was staged of about twenty-five varieties. With reference to the cultivation needed for obtaining large bulbs, the lecturer laid special stress on good ground, open situation and deep digging, the finest strain of seed obtainable, sowing the seeds under glass, hardening, planting out, watering, feeding, lifting, preparing and finishing the bulbs for exhibition; mode of keeping, and concluded by briefly touching upon diseases and pests. An interesting discussion followed. In the competition for three vases of flowers, three distinct kinds (out-door grown), there were five entries, and some lovely blooms of Roses, Dahlias, Pentstemons, Marigolds, etc., were forthcoming.

The awards were as follow:—First, Mr. A. H. FULKER, Elmhurst Gardens, Reading; second, Mr. A. W. GOWER, Calcot Grange Gardens; third, Mr. H. WYNN, Lucern's House Gardens, Goring Heath.

In the non-competitive section there were several fine exhibits including Tomatos by Mr. F. TURNER, Southview, Calcot (First-Class Certificate); six dishes of Apples, by Mr. G. TOVEY, The Gardens, Leighton Park (Award of Merit); several varieties of Gladioli, by Mr. T. C. WAITE, Verona, Basingstoke Road, Reading (Award of Merit); and some large specimens of Peasgood's Nonesuch Apples, shown by Mr. F. H. PRATTEN, The Oaks, Shinfield Road, Reading.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

THE September exhibition organised by the French National Horticultural Society in the Exhibition of Decorative Arts, Paris, took the form of two distinct displays, separated by an interval of a week, the first one specially concerned with Dahlias, the second with vegetables. As regards the first event, as in previous exhibitions, the most important display was that of Messrs. VILMORIN-ANDRIEUX AND Co., of Paris. It consisted of two large decorative groups, placed on each side of the central portion of the pavilion, with a background of large Palms and Tagetes (Indian Roses), ornamented with a graceful wooden balustrade, painted grey. In the foreground were groups of Zinnias, with a border of dwarf "Cockscomb" Celosias in various tints. There were also considerable numbers of cut Dahlias of all kinds—single, pompon, mignons, collerette, cactus, and decorative—of which the decoratives far outnumbered the rest. Among the most remarkable varieties represented were Insulinde, yellow; Ramonda, a semi-double red; Orange Bowen, red; Rev. John Robinson, violet; Mme. Ballego, red; Dandolo, red with white points; Taupier, salmon-coloured; Emma Groot, mauve; Ramire, red; Finasseur, yellow; Mennie Carlee, pure white; Lady Derby, violet; and Conquerant, streaked mauve. The group also contained the prettiest of the Californian novelties, such as Rookwood, large lilac-pink flower, and Cigarette, red and white tips, the colouring resembling that of Dandolo, but the plant being taller. Certificates of Merit were awarded to Dahlias Argo, a fine red magenta decorative; Macao, "isabelle" yellow; and Roger de Vilmorin, a pretty pink variety, the colour resembling that of Delices.

M. NAGELS, the well-known grower of Antwerp, showed some fine seedlings, and Certificates of Merit were awarded to the following decorative varieties:—Gloire de Nagels, "isabelle",

yellow; Vanité, a curious chamois colour with white tips; Mrs. Walter Keyser, deep brown-red; and M. Alfred Martongin, red-magenta. The variety Mme. Emile Draps was also noted, of a fine flesh pink colour with yellowish reflexes.

M. NONIN, of Châtillon sous Bagneux, had also a very fine display of Dahlias, among which were noted Mme. Jean Mercier, red-brown; Soliel Couchant, pinkish yellow; Pride of California, a handsome deep red; and King Harold, blackish red.

M. MARTIN, of Digoin, brought a very choice selection of varieties of the "star" type, with single flowers bearing a few ligules, delicately modelled; these varieties are especially valuable for florists' work, as they make light and pretty floral decorations, though, unfortunately, they are extremely fugitive. The group was set off with foliage of Asparagus plumosus, with a background of Pteris tremula. Among the varieties shown were Marie-Louise, pink; Charlotte, pinkish white; Etoile de Foch, sulphur yellow; and M. Lesourd, primrose yellow.

MM. BRUN ET LANSAC, horticulturists of Le Vésinet, also had an excellent group, comprising for the most part unnamed seedlings, decorative and cactus, including Le Vésinet, yellow-brown; Fleur de corail, pink; Charlotte Brun, brown-yellow; Beauté Blonde, chamois; and a pretty scarlet cactus variety with yellow tips, Paulette Faure.

MM. CAYEUX ET LE CLERC, of Paris, showed Dahlias only at the second exhibition, in a large group at the entrance of the pavilion; their display was particularly pretty and graceful, against a background of Asparagus Sprengeri foliage. Among other varieties included were Ada Finch (Anemone-flowered), yellowish white; Attraction, pale pink; Ovide, red brown; Mme. Berthe Daru, yellow brown; and Marc Aureau, citron yellow.

Orchids were well represented at both exhibitions, both in the large pavilion and in the small greenhouse specially reserved for them. Among those sent by MM. VACHEROT ET LECOUFFLE, Boissy St. Léger, were Cattleya Jeanne d'Arc (C. Fabia × Lord Rothschild), with white divisions and pink and yellow labellum; Brasso-Cattleya Rosa Bonheur (Marie Fournier × Mossiae vernalis), a well-formed flower with an enormous pink labellum; Oncidium Burgeffianum (O. Marshallianum × Rogersii), flower bright yellow, large labellum; and Brasso-Cattleya Canhamiana alba.

M. MARCOZ' display from Brunoy included Brasso-Cattleya Henri Constantin, a very fine pink flower, the labellum yellow in the centre; and Cattleya amabilis alba, pure white, the centre of the purple labellum being yellow.

The "Julien Potin" Cup for the best flower in the exhibition was awarded to Brasso-Cattleya Mrs. Leemann × C. Mendelii, with white divisions and an enormous very widely opened labellum, yellow-brown in the centre and pale pink at the edges.

M. MARON, of Brunoy, sent, among other Orchids, Brasso-Cattleya Schilleriana × Digbyana, with yellow-brown divisions and purple and yellow labellum, very markedly fimbriated; Cattleya Thiepval, white, with an elongated labellum of yellow and purple; Brasso-Cattleya Maronice alba, pure white, greenish in the centre; Cattleya Maréchal Lyautey, with chamois yellow divisions and purple and yellow labellum; a hybrid of C. aurea, with a large reddish labellum; and Miltonia Moreliana, with deep purple flower.

From M. JULIEN POTIN, of Paris, came Laelio-Cattleya luminosa × aurea, with yellow divisions and a labellum wholly purple-black; Laelio-Cattleya Minerve, a yellow flower streaked with pink, of a large size; and many other good things.

On the occasion of the second exhibition, which was chiefly devoted to vegetables, the whole centre of the pavilion was occupied by an immense and very artistically arranged exhibit of vegetables from MM. VILMORIN-ANDRIEUX ET CIE. The design comprised six large pylons garlanded with Tomatos and crowned with immense Pumpkins. Between the pylons were rows of Cauliflowers gleaming white,

mounds of Chicory, and displays of Cabbages. Red Cabbage, curled Chicory, etc.

There were also light sprays of Pimento with Asparagus foliage ornamented with fruits; large curled Cabbages, and Cabbages with Coleus leaves. Rows of Tagetes served as lines of demarkation, and brightened up the display with their vivid colouring. Eight secondary columns, painted bright yellow, were also abundantly decorated with garlands of Tomatos and Colocynths. A fruiting branch of the China Quince, Cydonia cathayensis, carried fifteen or so large fruits, and light wreaths of the pretty Vine, Vitis brevipedunculata, bore its decorative blue fruits. At the four corners were groups of Chrysanthemums, comprising, among others, the varieties René Albert, white; Président Millerand, red; Le Léonnais, red on a yellow ground; and Mona Davis. The display was further enlivened by sheaves of primulinus hybrid Gladioli, and by Dahlias Jericho, King Harold, Lady Derby, Extase, and Arago. At both exhibitions there was a bunch of cut flowers of the garden Iris Alliés, the first variety which actually blooms again in the autumn.

Among other exhibits were a pretty rock garden with a sunk path, well-furnished with various plants, from MAISON FERARD, of Paris; a lovely display of Begonias shown in masses of separate colours, from MM. VALLERAND, of Taverny, including the varieties Bertini anemoneiflora, pale pink, and Victor Boret (tuberous), chamois yellow; a prettily assembled collection of cut flowers in decorative vases, including Asters and other subjects, from M. THIEBAUT, of Paris; trees and Roses from M. LÉCOLIER, of La Celle S. Cloud; M. WEISS' pygmy Japanese trees and decorations; M. CHATRIER's fine Caladiums; the fruits and fruit trees in pots sent by M. NOMBLOT from Bourg la Reine; a group of hot-house plants from the garden of the Luxembourg; and a very creditable display of vegetables from the syndicate of market gardeners and growers of the Département de la Seine. A. M.

NATIONAL CHRYSANTHEMUM

THIS Society's Floral Committee met at the Royal Horticultural Hall, Westminster, on Monday, October 5, when over a dozen novelties were presented and the following awards made:—

FIRST-CLASS CERTIFICATES.

Brightness.—(2.1.b.) A fairly large, loosely reflexing variety of bright chestnut-red colouring that glistens pleasingly in bright light. Shown by Mr. H. WOOLMAN, Shirley, Birmingham.

Cranford Cream.—(2.1.c) (Fig. 121). A beautiful variety, and one that should prove valuable alike for garden and market use. Capital in spray form as shown. The colour of the compact flowers is cream with deeper, almost pale yellow, centre. Shown by Mr. W. ROOTS, Hollicott, Cranford.

COMMENDATION.

Nancy Thomas.—(2.1.c.) A free, small-flowered variety of pretty form and bright bronzy-red colour, with the florets lightly tipped with gold. Shown by Mr. H. WOOLMAN.

Cranford Red.—(2.1.c.) The lightly formed flowers of this orange-chestnut variety are very suitable for floral decorations. Shown by Mr. W. ROOTS.

Obituary.

Albert Robst.—We regret to announce the death, on the 20th September, in his eighty-first year, of Albert Robst, head gardener in the firm of Ernest Benary, at Erfurt, Germany. This veteran nursery employee only celebrated, in March last, the sixty-fifth anniversary of his engagement with the firm, an account of which was given in our issue of the 2nd May. p. 295.

MARKETS.

COVENT GARDEN, Tuesday, October 13th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Erica gracilis, 48's	s. d. s. d.
cuneatum	per doz. ... 10 0-13 0	per doz. ... 24 0-30 0	
—elegans	per doz. ... 10 0-12 0	—nivalis, 48's per	doz. ... 24 0-30 0
Aralia Sieboldii	per doz. ... 9 0-10 0		
Aracarias, per	doz. ... 30 0-42 0	Above varieties	
Asparagus plu-	mosus ... 12 0-18 0	In 60's, per doz. ... 12 0-15 0	
—Sprengeri	per doz. ... 12 0-18 0	—In Thumbs, per	doz. ... 9 0-10 0
Aspidistra, green	36 0-60 0	Marguerites, 48's	per doz. ... 15 0-18 0
Asplenium, per	doz. ... 12 0-18 0	Nephrolepis in	variety ... 12 0-18 0
—32's	per doz. ... 24 0-30 0	—32's	per doz. ... 24 0-30 0
—nidus	per doz. ... 12 0-15 0		
Cacti, per tray,	—12's, 15's ... 5 0-7		
Chrysanthemums,	pot grown, in		
variety, 48's per	doz. ... 18 0-24 0		
Crotons, per doz.	30 0-45 0		
Cyrtomium	per doz. ... 10 0-25 0		

Cut Flowers, etc.; Average Wholesale Prices.

Acacia (Mimosa),	s. d. s. d.	Heather, white,	s. d. s. d.
per bun. ... 1 3-1 6		per doz. bun. ... 10 0-12 0	
Adiantum deco-	rum, per doz. ... 9 0-10 0	pink, per doz.	bun. ... 8 0-9 0
—cuneatum, per	doz. bun. ... 6 0-8 0	Honesty, per doz.	bun. ... 18 0-30 0
Arums (Richardias),	per doz. ... 5 0-7 0	Lapagerias, per	doz. blooms ... 3 6-4 0
Asparagus plu-	mosus, per bun.	Lilium longiflorum	long, per doz. ... 4 0-4 6
long trails, 6's	2 0-3 0	—speciosum	album, long, per
med. sprays ... 1 6-2 6		doz. ... 3 6-4 0	
short ... 0 9-1 3		—short, per doz.	4 0-5 0
—Sprengeri, per bun.	long sprays ... 1 6-2 0	—speciosum	rubrum, long,
med. ... 1 0-1 6		per doz. blooms	2 0-2 6
short ... 0 4-1 0		—short ... 1 6-2 0	
Aster Amellus		Lily-of-the-Valley,	per doz. bun. ... 24 0-30 0
King George,	per doz. bun. ... 6 0-9 0	Orchids, per doz.	
Bouvardia, white,	per doz. bun. ... 12 0-15 0	—Cattleyas ... 36 0-48 0	
Camellias, white,	per box, 12's ... 3 0-3 6	—Cypripediums	5 0-7 0
Carnations, per	doz. blooms ... 2 6-4 0	Physalis, per doz.	bun. ... 15 0-24 0
Chrysanthemums		Roses, per doz.	blooms, Rich-
—white, large	blooms, per doz. ... 6 0-7 0	mond ... 2 6-4 0	
—yellow, large	blooms, per doz. ... 6 0-7 0	—Liberty ... 2 6-4 0	
—pink, large	blooms, per doz. ... 5 0-6 0	—Madame Butter-	fly ... 2 0-4 0
—bronze, large	blooms, per doz. ... 5 0-6 0	—Mme. Abel	Chatenay ... 2 0-3 0
above colours—		—Melody ... 2 0-3 6	
—medium blooms,	per doz. ... 3 0-4 0	—Molly Sharman	Crawford ... 2 6-4 0
—white spray per	doz. bun. ... 10 0-15 0	—Ophelia ... 2 6-3 6	
—yellow, spray,	per doz. bun. ... 9 0-12 0	—Sunburst ... 2 6-3 6	
—pink spray, per	doz. bun. ... 9 0-10 0	Scabiosa caucas-	ica, per doz.
—bronze spray,	per doz. bun. ... 8 0-12 0	bun. ... 6 0-7 0	
Cornflowers per	doz. bun. ... 2 6-3 0	Smilax, per doz.	trails ... 3 0-3 6
Croton leaves	per doz. ... 0 9-2 6	Statice, mauve ... 6 0-8 0	
Fern, French, per	doz. bun. ... 10 0-12 0	—white, per doz.	bun. ... 6 0-8 0
Gardenias, per	box, 12's, 18's ... 5 0-6 0	Stock, English	white ... 6 0-8 0
		—(Parma), per	bun. ... 3 0-3 6

REMARKS.—Supplies of flowers in general are equal to requirements. Chrysanthemums are the chief subjects, and bunch Chrysanthemums at the beginning of the week exceeded the demand owing to the mild weather. White blooms were the shortest in supply. Of the disbudded blooms, medium and large size, there is now a better selection. Exhibition blooms are also receiving more attention. Carnations have been arriving in much better condition during the past few days, the new crops being more reliable. The return of cooler weather has reduced the supply of all Roses; prices are on the up-grade. Lilium longiflorum advanced in price at the week-end. Richardias (Arums) are a better trade, their price being easier and finer spathes are on sale, while Camellias and Bouvardia are being taken the place of Lapageria and Stephanotis amongst the choice blooms. Gardenias are very popular just now, but the cooler weather has checked the supplies. Gladioli are not to be recommended now; one or two scarlet varieties are the most reliable. Amongst Orchids there is a good supply of Cypripediums, but consignments of Cattleyas are very irregular. Small consignments of flowers are being received from France consisting of Acacia (Mimosa) and Parma Violets. Solanum berries, a few baskets of Eucalyptus and Muscus are also coming to hand from French growers.

Fruit: Average Wholesale Prices.

Apples, English, s. d. s. d.	Grapes, per lb.—	s. d. s. d.
—per 4 sieve—	—Canon Hall ... 2 0-5 0	
—Cox's special ... 12 0-15 0	—Guernsey ... 0 9-1 0	
—best ... 8 0-10 0	—Lisbon White	per case ... 10 0-14 0
—others ... 4 0-6 0	—Lisbon Black	per case ... 10 0-14 0
—James Grieve ... 3 0-4 0		
—Ribston Pippin ... 4 0-6 0	Grape Fruit,	
—Worcester Pear-	—Cuban ... 21 0-28 0	
main ... 2 6-5 0	—South African,	per case ... 32 6-37 6
Apples, Cooking—		
—Bramley's Seed-	Lemons, Messina,	
ling ... 4 0-6 0	per box ... 16 0-24 0	
—Lane's Prince	—Naples ... 25 0-35 0	
Albert ... 4 0-5 0	Melons (Forced)	
—Lord Derby ... 4 0-5 0	basket ... 10 0-16 0	
—Blenheim Pippin ... 6 0-10 0	Nectarines, per	doz. ... 6 0-18 0
Apples, American—	Pines ... 3 0-5 0	
—Jonathan, per	Peaches, English	per doz. ... 8 0-24 0
case ... 10 0-14 0	Pears, Pitmaston,	per doz. ... 3 0-6 0
—B.C., Cox's per	—Doyenné du	Comice, per doz. ... 4 0-10 0
case ... 16 0-20 0	—Conference ... 8 0-12 0	
—York Imperial	California—	
barrels ... 16 0-22 0	—Beurre Bosc ... 23 0-24 0	
Apples, Nova Scotia—	—D'Anjou ... 22 0-24 0	
—Ribston, barrels ... 14 0-20 0	—Nelis ... 26 0-28 0	
—Blenheim, barrels ... 14 0-18 0	—Comice, per 4	case ... 16 0-18 0
—British Colum-	—Keffler, per case ... 10 6	
bian, Cox's, per case ... 14 0-18 0	South African	
Bananas ... 14 0-22 6	Oranges ... 26 0-40 0	
Blackberries—	Walnuts, slugs,	per lb. ... 0 4-0 6
—wild, per lb. ... 0 2-0 3 1/2	—Doubles, per lb. ... 0 8-1 6	
Chestnuts, Italian,		
per bag ... 16 0		
—French, per bag ... 18 0		
Cobnuts, per lb. ... 1 0-1 1		
Figs, French, per		
box ... 0 10-1 6		
Grapes, per lb.—		
—Belgian, Alicante ... 1 0-1 6		
—English ... 1 0-2 0		
—Colmar ... 1 6-3 0		
—Hamburg ... 1 0-1 6		
—Muscat ... 2 6-4 6		

Vegetables: Average Wholesale Prices.

Batavia ... s. d. s. d.	Marrows, tally ... s. d. s. d.
Beans—	5 0-6 0
—Scarlet Runner,	
bush ... 2 6-3 0	Onions—
Beets, per cwt. ... 6 0-8 0	—Dutch ... 6 0-7 0
Cabbage, per tally ... 5 0-7 6	—English, per cwt. ... 7 0-8 0
Celery, per doz.	—Valencia ... 9 0-10 0
fans ... 16 0-24 0	Parsnips, per cwt. ... 6 0-7 0
Cauliflowers, per	Potatoes—
doz. ... 1 6-3 6	—King Edward,
Carrots, new, per	per cwt. ... 5 0-7 6
bag ... 6 0-7 0	—Others ... 4 0-5 0
Cucumbers, per doz. ... 4 0-5 0	Sprouts, per 4 bag ... 5 0-7 0
—Flats, 36's, 42's ... 14 0-16 0	Savoy, per doz. ... 2 0-2 6
Dutch Onions ... 8 0-9 0	Tomatoes, English,
Endive, per doz. ... 1 6-2 6	per strike—
Hors-radish, per	—pink ... 3 0-5 0
bundle ... 2 0-3 6	—pink & white ... 3 0-5 0
Lettuce, Cos, doz. ... 0 6-1 0	—blue ... 2 0-2 6
—cabbage ... 0 6-1 0	—Guernsey ... 1 6-2 6
Mushrooms, cupe ... 4 0-5 6	—Jersey ... 1 0-2 6
—Broilers ... 3 0-3 6	—Dutch ... 1 6-2 6
—Field ... 1 0-2 0	Turnips, per cwt. ... 5 0-6 0

REMARKS.—There is no great improvement in the general demand although one or two sections of the market have shown more liveliness than of late. The main features of the week have been the very large quantities of Apples, both home-grown and imported, that have been available. While medium and second-grade packs have been a drag on the market, there is a slightly better tone for top-grade dessert and cooking varieties, but even so, prices are anything but satisfactory to the growers. Grapes are plentiful, large supplies from Guernsey and Holland being the main reason for comparatively low figures. Peaches and Nectarines are selling fairly well. Melons are a moderate trade, and green Figs are selling freely. Pears are not plentiful and are realising improved prices. Cobnuts are scarce and inclined to be dearer. Walnuts are cheaper, ample supplies from France bringing down values. The Tomato trade is still depressed although there is a better inquiry for new crop fruits at a higher price level. At the moment, Jersey Tomatoes are plentiful and very cheap, but when these show signs of finishing there should be a better tendency all round. Trade in Cucumbers is fairly good at steady figures. Mushrooms have fluctuated in prices somewhat. Forced Beans from Guernsey have sold well, considering there are still plenty of out-door Beans. A few new Potatoes from Guernsey have also sold freely at good figures. Salads are plentiful and cheap. Green vegetables are in ample supply with some good Sprouts meeting an excellent demand. The Potato trade is quiet with good supplies available.

GLASGOW.

The cut flower market was flooded with Chrysanthemums during the past week, and salesmen had to take whatever prices they could get for sprays. On Friday they were only worth about 1/- per box, and the average values for the six days worked out as follows:—Polly, Loan's Pink, crimson and yellow, 2d. to 4d. per bunch; Well's White, 2d. to 4d.; Pink and Bronze Masse, 3d. to 4d.; Elstob Yellow, 3d. to 6d.; Betty Spark, 4d. to 7d.; Framfield White, 6d. to 8d. for 6's; Delores, 8d. to 1/-; Sanctity, 7d. to 10d.; and Almirante, 11d. to 1/3. Good red Gladioli made 1/6 for 6's; pink, 6d. to 10d.; and loose spikes, 9d. to 1/- per dozen. Carnations were cheaper at 2/- to 2/6 per doz., but Roses kept steady at 2/6 to 3/6 for Madame Butterfly and Madame A. Chateau; 2/- to 2/6 for Mrs. H. Stevens; and 1/6 to 2/6 for Richmond. Lilium longiflorum Harrisil was dearer at 4/6 to 5/-; and L. lancifolium rubrum, 2/- to 2/6. Asters ranged from 1/- to 2/-, and

Michaelmas Daisies fluctuated between 2d. and 8d. according to the size of the bunch. Gypsophylla sold at 2d. to 5d.; Similax, 1/6 to 2/-, and Asparagus Fern, 9d. to 1/6. Following on the previous week's slump in prices Apples made a sharp recovery, cases first advancing about 3/-, and barrels from 10/- to 15/- consequent on the falling off in supplies. Closing quotations were Jonathan, 13/- to 15/6 per case; King David, 10/6 to 13/6; Wealthy, 8/- to 10/-; York Imperial, 22/- to 30/- per barrel. Wealthy, 25/- to 30/-; Gand, 20/- to 28/-; Ben Davis, 22/- to 30/-; English Warner's King were worth 20/- to 24/- per cwt.; Grenadier, 14/- to 16/-; Lord Derby, 20/- to 26/-; and Worcester Pearmain, 3/6 to 5/- per half-bushel. Pears are arriving in first-rate condition and fully maintain the previous week's prices, and prices for Grapes were also unchanged. The first consignment of Gros Colmar from the big vine at Kippin made 4/- per lb. Scotch Damsons returned 1/- per lb; Victoria Plums, 10d., and cooking qualities, 5d. to 6d. Grape Fruit realised 24/- to 30/- per case. Scotch Tomatoes continued cheap at 6d. to 8d. per lb., but 10d. was paid on Friday for the product of James Haire, Lesmahagow.

TRADE NOTE.

THE increasing popularity of rock plants was demonstrated in a remarkable manner when Messrs. Protheroe and Morris of Cheapside, conducted a sale at Messrs. Clarence Elliott's Nurseries on September 30 last. In addition to the large attendance a great many orders had been received for the sale and in consequence although there were 700 lots included in the sale, about twice that number were actually disposed of. The demand for shrubs suitable for rockeries was so considerable that not all the would-be customers could be supplied, and great interest was also evinced in the alpine plants for which this nursery is famous, as well as the popular herbaceous subjects such as Paeonies, Delphiniums and Asters. The many fine novelties included in the sale made it an unusually attractive one, and Messrs. Clarence Elliott, Ltd., are proposing to make the sale an annual event.

THE WEATHER.

The wind was the most north-westerly and northerly in September since the Southport Observatory was established fifty-four years ago. It was, therefore, windy, cool and very equable. Showers were numerous; but the duration of sunshine was, nevertheless, nearly normal. Ozone was very abundant, and visibility excellent. The mean temperature only reached 53.2, which was 2.2° below normal. The ground and lakes were relatively cooler; but only one slight touch of frost occurred even upon the grass, viz., on the 13th. Rain fell on no fewer than twenty-three days, or eight more than usual; but the total quantity was not greater than 3.77 inches, or 0.66 inch above the average. Of bright sunshine, 137 hours were recorded, or merely two fewer than the normal number. Wind movement exceeded the average by sixty-three miles per day. Slight gales were experienced on three occasions. Hail fell once. Thunder was absent. Joseph Barendell, Borough Meteorologist, The Fernley Observatory, Southport.

THE WEATHER IN SCOTLAND.

Sunshine totalled 102.6 hours—a daily average of 3.42 hours, and a percentage of about 27. This is slightly under normal although there were only four absolutely sunless days. Rainfall was above the average for September being 2.78 inches distributed over eighteen days. The greatest amount for one day was 18.03 millimetres—(.71 of an inch) on the 9th. The mean temperature for the month was 53°, which is normal for the district. The highest maximum of 67° occurred on the 16th, and the lowest minimum of 54° on the 22nd and 24th. The lowest and highest minima of 38° and 52° were recorded on the 25th and 29th respectively. On the grass the lowest temperature of 29° was reached on the 12th—the only date giving ground frost—although 31° was touched on the 17th and 25th. The soil temperature, at one foot deep, fell 6° during the month, from 58° at the beginning to 52° at the close. A considerable depression occurred between the 19th and 24th, the lowest barometric reading of 987.8 millibars being noted on the 23rd. The 13th gave the highest barometric reading, viz., 1026.5 millibars. The mean pressure for the month was 1011.2 millibars.—(29.86 inches). Northerly gales took place during the afternoon of the 4th and the evening of the 10th. With these exceptions, winds were chiefly south-westerly and moderate in force. Visibility was good generally and humidity low. William McClelland, Meteorological Station, St. Andrew's Provincial Committee at the Training College Gardens, Mayfield, Dundee.

CATALOGUES RECEIVED.

WATKINS AND SIMPSON, LTD., 27, Drury Lane, W.C.2.—Flower novelties (wholesale).
T. SMITH, Daisy Hill Nursery, Newry.—Trees and Shrubs, Climbing Plants, etc.
W. TRESEDER, LTD., 30, Cowbridge Road, Cardiff.—Dahlias.
R. C. NOTCUTT, Woodbridge, Suffolk.—Nursery Stock.
CHAS. TURNER, Slough.—Roses.
HUGH M. KERSHAW, LTD., Keighley.—Tennis Courts, etc.
CLIBRANS, LTD., Altrincham.—Trees, Shrubs and Climbers; Herbaceous and Alpine Plants.

ANSWERS TO CORRESPONDENTS.

APPLE PEASGOOD'S NONESUCH. *J. B., Mon.* The grub in the fruit of the Peasgood Apple is that of the Codlin Moth. The best method of combating this pest is to grease-band the trees at this season of the year. The cracks on the fruit of the Apple are caused by Apple scab. Bordeaux mixture is the best specific, although in the case of a few varieties of Apples it is apt to cause scorching. Lime sulphur, is however, safe to use. The trees should be sprayed immediately before flowering, a second time so soon as the petals fall, and on a third occasion about three weeks later.

APPLE TREE DISEASED. *A. M.* The Apple shoots are affected with one of the worst infestations of Mussel Scale we have seen for a long time. Unless the tree is especially valued we advise you to destroy it on the garden fire. Where only a moderate number of scales are present they may be removed by scraping the bark and scrubbing the latter with some strong specific such as caustic alkali. In using this strong chemical the hands should be protected with a pair of gloves.

CARNATION RUST. *W. R. B.* The plants are attacked with Carnation rust. Spray the plants with potassium sulphide, but if the disease is very severe burn the diseased plants and obtain fresh stock.

CELERY DISEASED. *E. G. O.* The disease on the Celery is caused by the fungus *Phoma apicola*. This is an uncommon disease; the fungus is said to be sometimes present on Celery seed. All diseased plants should be dug up and burnt, as well as the remains left of other Celery plants adjacent. Fresh ground should be chosen for growing Celery next season.

GARDENERS' NOTICE. *R. H.* In the absence of any local custom to the contrary, you would be entitled to one week's notice expiring on the day of the week on which your wages are payable, and a notice given you on Tuesday to finish on Saturday would not be sufficient.

GARDEN LABOURERS' HOURS AND WAGES IN HAMPSHIRE. *B. S. G.* The usual hours worked by a garden labourer in Hampshire are: summer time, 7 a.m. till 5 p.m.; Saturdays, 7 a.m. till 1 p.m.; half-an-hour is allowed for breakfast, and one hour for dinner, but on Saturday, breakfast time only is allowed. Winter: About 7.30 till 4.30 p.m., or start at 8 a.m. when no breakfast time is allowed. Wages, 32/- per week; usually a cottage is provided at a rental of 2/- weekly.

GRAPE LADY DOWNE'S SEEDLING SHRIVELLING. *W. C. B.* The berries you sent are not diseased. Lady Downe's is not one of the easiest Grapes to finish satisfactorily, especially in unfavourable seasons like the present. The trouble is most common when this variety is grown in a vinery with other sorts of Grapes.

GRAPES DISEASED. *Jay.* The berries are affected with spot disease caused by the fungus *Gloeosporium ampelophagum*. Spray with liver of sulphur at a strength of half-an-ounce in two gallons of water, or dust flowers of sulphur on the leaves and bunches, and again at an interval of ten days. This winter, when the vines are dormant, spray the rods with iron sulphate in solution.

HERBACEOUS PLANTS. *C. G.* Although Montbretias, Gladioli and Lilliums are bulbous plants they are also strictly herbaceous plants, and would be eligible for inclusion in a display of herbaceous plants at a flower show.

MAGGOTS IN STEM OF BEGONIA GLOIRE DE LORRAINE. *W. H.* The maggots attacking the Begonia stem are fly larvae. It is impossible to say for certain without breeding them what the adult is, but from their form they are very likely members of the Bibionidae

to which the well-known "Fever Flies" belong. The larvae of this group feed on roots of plants, but whether as parasites or saprophages is not certain. In this case there are signs that the roots have been gnawed by some larger insect first. It would be advisable to ascertain whether wireworms or leather jackets are present, since damage done by them would start a rot in the plant and furnish suitable conditions for the attack of the fly larvae. It is unlikely that the fly larvae would attack healthy tissue. The potting soil should be examined, and if found to contain these maggots it should be mixed with a naphthalene preparation and left for a fortnight in a heap, covered with sacks. It should be well aerated before use.

MELON DISEASED. *E. G. O.* The Melon fruit is attacked by a fungus, *Botrytis cinerea*, at the stem end. This indicates that the atmospheric conditions of the glasshouse was too moist during the period of cultivation. The maintenance of a dry atmosphere and careful attention to the ventilation of the house should be sufficient to prevent infection of the fruit by this fungus, which obviously entered that part of the fruit where moisture had condensed.

NAMES OF FRUIT.—F. B. D. 1, Forfar Pippin; 2, deformed fruit, not recognised; 3, Golden Noble; 4, Blenheim Pippin; 5, Dumelow's Seedling; 6, Hambledon Deux Ans; 7 and 9, probably Manx Codlin; 8, Warner's King; 10, Newton Wonder; 11, Worcester Pearmain; 12, Fearn's Pippin; 13, Court Pendu Plat. *M. W.* 1, Greenup's Pippin (syn. Yorkshire Beauty); 2, Jolly Beggar; 3, Queen Caroline; 4, Baumann's Red Winter Reinette. *J. B.* Northern Dumpling. *B. E. G. B.* Apples: 1, Lady Sudeley; 2, Stirling Castle; 3, Potts's Seedling; 4 and 18, Warner's King; 5, Worcester Pearmain; 6, Maltster; 7, Early Harvest; 8, Broad End; 9 and 13, Ribston Pippin; 10, Yorkshire Greening; 11, King of the Pippins; 12, Stone Pippin; 14, Ringer; 15, Lord Grosvenor; 16, Sandringham; 17, Cullen; 19, Prince Bismarck; 20, Yellow Ingestrie; Pears: 1, Triomphe de Vienne; 2, Josephine de Malines; 3, Vicar of Winkfield; 4, Hesse; 5, Maréchal de Cour; 6, Beurré Diel; 7, Fondante d'Automne. *A. G.* Graham (syn. Kentish Deux Ans). *B. S. G.* 1, Hollandbury; 2, Cox's Pomona; 3, Williams' Favourite; 4, Sam Young; 5, S. red, King of the Pippins; green, Golden Noble. *P. G.* 1, Nancy Jackson; 2, Hornhead Pearmain; 3, Annie Elizabeth; 4, Fearn's Pippin; 5, Cox's Orange Pippin; 6, Allington Pippin. *J. B.* 3, not recognised; *E. F.* large fruit: Grenadier; small fruit; deformed, not recognised.

PLANTS FOR AN HERBACEOUS BORDER FACING WEST. *W. F. B.* Numbers of plants are suitable for the position named. It would be advisable to dig the ground deeply to provide ample root run, incorporating plenty of leaf-mould and well-rotted manure with the soil, with an additional dressing of decayed stable or artificial manure each spring. Before planting, the ground should be allowed to settle, and on no account be in a wet condition. Plant firmly and keep the surface well-hoed afterwards. The following selection of plants with their heights and season of blooming will thrive and flower well:—*Aconitum Napellus* and *bicolor*, 4 feet, July to September; *A. Wilsonii* and *Sparke's var.*, 5 feet, September to October; *Anemones japonica*, in variety, 3 feet, August to October; *Aquilegia* in variety, 2 feet, May to July; *Asters*, (*Michaelmas Daisies*) in variety, 2 feet to 5 feet, September to November; *Astille Arendsii* in variety, 3 feet to 4 feet, July till August; *Achusa Opal* and *Best of All*, 4 feet, June to August; *Betonica grandiflora superba*, 1 foot, June to August; *Bocconia cordata*, 5 feet to 6 feet, July to September; *Campanula persicifolia* in variety, 3 feet, June to September; *C. glomerata dahurica*, 1½ foot, June to August; *C. lactiflora*, 4 feet,

July to September; *Chrysobactron Hookeri*, 1 foot, July to August; *Cimicifuga* in variety, 2 feet to 3 feet, July to August; *Corydalis bulbosa* and *C. Alleni*, 1 foot, April to June; *Digitalis gloxiniflora* The Shirley, 5 feet, May to July; *Doronicum excelsum*, 2½ feet, April to July; *Epimedium niveum* and *E. violaceum*, 1 foot, April to July; *Funkias* in variety, 1 foot to 2 feet, July to September; *Gillenia trifoliata*, 2 feet, June to August; *Iris barbata* in variety, 2 feet to 3 feet, May and June; *Lythrum roseum*, Perry's variety, 3 feet, June to August; *Megaseas* in variety, 1½ foot, March to July; Double and single *Paeonies*, 3 feet, May to July; *Phlox decussata* in variety, 2 feet to 4 feet, July to September; *P. suffruticosa* in variety, 2 feet to 3 feet, June to August; *Platycodon grandiflorum*, 1½ foot to 2½ feet, July to September; *Polemonium* in variety, 2½ feet, May and June; *Polygonatum multiflorum*, 2½ feet, June to July; *Polygonum campanulatum*, 2½ feet, July to September; *Ranunculus aconitifolius plenus*, 1½ foot, May to July; *Thermopsis montana*, 2½ feet, April to July; *Tiarella cordifolia*, 1 foot, April to July; *Trollius* in variety, 2½ feet, May to July; *Chrysanthemum maximum* in variety, 2 feet to 3½ feet, May to August; *Erigerons* in variety, 2 feet to 3 feet, May to August; *Heleniums* in variety, 2 feet to 5 feet, June to September; *Helianthus* in variety, 3 feet to 6 feet, August to September; *Rudbeckia* in variety, 2 feet to 5 feet, July to August; and *Hemerocallis* in variety, 3 feet to 4 feet, June to August.

WIRE WORMS. *J. B., Mon.* The use of the particular manure you mention is not likely to have any influence on the spread of wire worm in the soil.

WIRE WORMS. *G. H.* You have confused the wire worm and the Leather Jacket. It is the latter which develops into the Daddy Long Legs. The adult insects of both wire worms and crane flies rarely infest cultivated land, but are found usually in grass land. It may be a few years before you can entirely rid the soil of the wire worms, especially if it contains a lot of decaying turf, but they will go in time.

Communications Received.—S. J. R. (Thanks for 2s. for R.G.O.F. Box).—K. S. H.—A. W. G.—W. H. W.—E. E. E.—J. L. P. & C.—K. K. K.

GARDENING APPOINTMENTS.

Mr. B. H. Baker, for the past eleven years gardener to the late H. AYRTON, Esq., Bankfield, Bingley, as gardener to Major HARRUP WILSON, Red House, Chapel Allerton, Leeds.

Mr. F. E. Cooper, for the past five years gardener to H. SMITH, Esq., at Gamston House, Retford, as gardener to Mrs. JEFFCOCK, Welham Hall, Retford, Notts.

Mr. James Dobman, as gardener to W. P. SINGLETON, Esq., The Elms, Colwall, near Malvern.

Mr. L. Dutton, for the past three years gardener to W. E. ANN, Esq., West Parkfields, Derby, as gardener to the same gentleman at Darley Fields, Derby.

Mr. P. Evans, for the past five-and-a-half-years foreman at Hoar Cross Hall, Burton-on-Trent, as gardener to A. H. HEBER-PERCY, Esq., Holnet Hall, Market Drayton, Salop.

Mr. F. Farwell, as gardener to M. CABALIE, Esq., Walton Grove, Walton-on-Thames, Surrey.

Mr. Albert O. Marshall, for over two-and-a-half years gardener to G. B. TATE, Esq., Bere Court, Pangbourne, Berkshire, as gardener to the LADY ELINOR DENISON, Ossington Hall, Newark-on-Trent, Nottingham. (Thanks for 2 6 for R.G.O.F. Box.—Eds.).

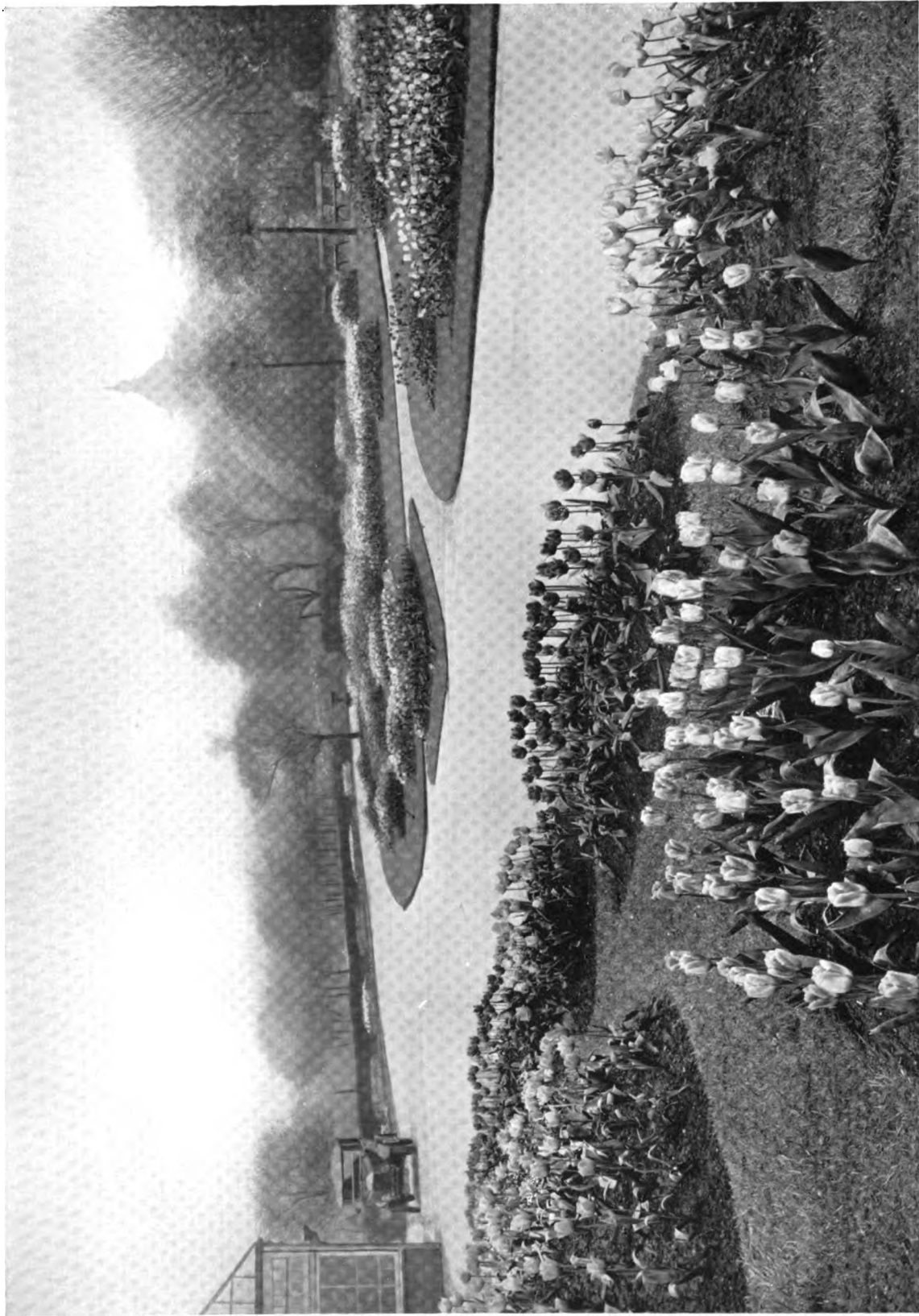
Mr. Neil McMullan, for the past fourteen months gardener to MAJOR JULIAN OSWALD, of Auchincruive by Ayr, as gardener and estate overseer to GEORGE TODD, Esq., of Trochrague, by Girvan. (Thanks for 3/- for R.G.O.F. Box.—Eds.).

Mr. L. G. Shaw, for the past nine years gardener to the late Mrs. CHARLES KENNET House, Harrow, as gardener to T. GEORGE PERRY, Esq., Henwick House, Worcester. (Thanks for 2/- for R.G.O.F. Box.—Eds.).

Mr. Lewis Smith, for the past fourteen years gardener to Capt. MALDWIN DRUMMOND at Cadland Park, Southampton, as agent to Capt. DRUMMOND at Cadland Park.

Mr. Leslie Smith, as gardener at Cadland Park Southampton, in succession to his father, Mr. Lewis Smith.

Mr. Edwin White, for the past sixteen years gardener to Mrs. W. F. PEEL, at the White House, and Landhurst, Hartfield, Sussex, as gardener to the same employer at Wargrave Hall, Wargrave, Berkshire. (Thanks for 2 6 for R.G.O.F. Box.—Eds.).



TULIPS IN ALEXANDRA PARK, OLDHAM.

THE Gardeners' Chronicle

No. 2026.—SATURDAY, OCTOBER 24, 1925.

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SUPPLEMENTARY PLATE.

Tulips in Alexandra Park, Oldham.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 47.3

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, October 21, 10 a.m. Bar. 29.65. Temp. 62°. Weather Dull.

Planting for Autumnal Colour.

As the days grow shorter and the skies descend closer to the earth bright colours in the garden become more precious. Fortunately they are easy of achievement and autumn borders are and may be expected to remain for some time yet gay with the varied colours of Michaelmas Daisies, Helenium, Rudbeckia, Japanese Anemones, late-flowering Aconite and so forth. More forethought and a larger space are, however, required if advantage is to be taken of the wonderful colour effects of foliage and fruit which may be obtained by the judicious planting of shrubs and trees which give vivid colours in autumn. Both space and forethought are needed, for of such plants not only are some of large growth, but certain of them if they are to produce the best results require to be massed together; others need to be planted in association with plants of ordinary green livery and others again are best when they appear in splendid isolation. Of plants which show bravely when in relatively close formation are the Azaleas. Yet

even their varied tones look all the brighter if interspersed with other plants of like proclivities—Andromedas, Kalmias, Pernettya mucronata and occasional Rhododendrons. Berberis, of which so many species, including B. Thunbergii and B. virescens make patches of vermilion, are perhaps most affective when not brought together in large groups, but planted either singly or in alignment. Bordering stone steps, B. polyantha of graceful habit as yet in leaf and with its berries still flesh-coloured will presently make coral balustrades, the bright hues of which may last till Christmas. Berberis indeed, if justice were to be done to that lovely genus, would require as much space for description as it deserves in the garden. Nowhere does B. Wilsonae, for example, look more beautiful than on a terrace wall with its low and wide spread branches depending half-way down, festooned with berries. Isolated, as for example, along the bank of a stream or as in St. John's garden, Oxford, erect and shapely at the edge of a shrubbery, the native Euonymus, E. europaeus is in full beauty and deserves to grow in every garden where shrubs and trees find room enough; attractive at a distance and increasing in attractiveness as the tree is approached it reveals the beautiful detail of its rosy-ribbed open fruits and the orange arils of the exposed seeds. Of lesser growth, at all events in youth, but of no less beauty, is Euonymus alatus, its young stems winged with cork and its leaves assuming, though for not very long retaining, a deep red tone. Deciduous like the foregoing, but no less worthy of a permanent place in the garden is Euonymus latifolius, the brilliant pendulous fruits of which show brightly against the deep glossy green leaves. Ample is the space which Leycesteria formosa with its crinolined habit demands. When it stands alone its splendid growth and arching branches with maroon and white flowers and bracts make of this plant a striking object indeed. Also alone and more remote where its "feet" may be near running water, the Liquidambar should be planted, L. styraciflua, with lobed, Maple-like leaves which become of a flaming red or it may be bright crimson-orange. These brilliant-leaved plants are, however, capricious both as to the time and tone of their colouring. No less demanding ample space is Parrotia persica, the leaves of which before they fall are all gold and crimson. It is not, however, a plant to leave alone, for if neglected it spreads itself in ungainly shape, and then neither its March beauty, which consists in its flowers with red stamens, nor that of October, shows to best advantage. Where it likes the soil Stranvaesia undulata—like Photinia serrulata—gives colour at all times. Its young leaves are apt to be of reddish tone and so are the old; but of course it is the red fruits which, when it sets them, makes the Stranvaesia a conspicuous object in the shrub garden. This year the Cotoneasters are all a mass of berries. The fan-like branches of C. horizontalis are aflame with them. The moisture-loving C. microphylla, which lies so comfortably and spreads so widely over a bank, although not so profuse with them, sets off its berries better perhaps by reason of its dark, glossy green foliage. It and the low trees, C. bacillaris with purple-black berries and C. frigida with bright red fruits, add much to the beauty of the autumn garden. Where park-like space may accommodate it, the best of the red Oaks, Waterer's variety of Quercus coccinea, makes a splendid contrast to the duller, more delicate tones of

our woodland trees, and, where water is, should gleam the April polled wands of the Willows—Salix vitellina britzensis, red; the yellow of the more vigorous type, S. vitellina; and the plum-coloured wands of S. prunifolia, with stems all whitewashed with wax, changing presently to a deep mahogany colour. The last named Willow, which is beautiful alike as a tree and as wands, is only too rarely grown; perhaps because of the existence of forms of poor colour. With the present wealth of plants which die beautifully so far as the foliage is concerned there are means of extending the period of enjoyment and interest of the garden right up to the end of the year and, needless to say, where Clematis grows the beauty of foliage of trees and shrubs may be enhanced by the planting of late flowering varieties, as for example, the rampant C. grata; that is, the hybrid grown under that name. Late also in flowering and a splendid plant when its roots find enough moisture is Polygonum baldschuanicum which will climb in a year or two to the top of trees forty feet or more in height and will indeed bode them no good unless it be cut back hard every year or two. Fortunately it does not resent the treatment, but after severe pruning will make growths of ten yards or more in length all festooned with flowers. Useless in a dry place it is one of the best of plants in a moist situation and so is its lesser image, P. Aubertii; very graceful and vigorous yet less rampant. Though the list might be extended space may be found now for only one more plant the beauty of which is no less great in autumn than it is at flowering time. It is Rosa Moyesii, the twelve-foot shoots of which, jewelled with their strangely lyrate red fruits, look their best when they arch over on either side of a narrow walk, converting it into a self-made pergola—the branches all but meeting overhead. Nor may omission be made of the autumnal effects of Conifers—the soft charm of the foliage of Cryptomeria japonica elegans, the Fern-like grace of Cupressus macrocarpa Crippsii (Retinospora Crippsii), the glaucousness of Picea pungens, which plant, however, is fickle in thriftiness and the delicate, well-groomed, columnar Junipers; these planted as they are in a clump below the rock garden at Wisley serve to demonstrate how splendid is the contribution which Coniferous trees may make to autumnal coloration.

Spring Flowers at Alexandra Park, Oldham.—

Our supplementary illustration shows part of the display of bulbs at Alexandra Park, Oldham, in the spring of the present year. The large circular bed contained, in quarters, Pink Beauty and Prince of Austria Tulips and Pink Beauty is the variety in the foreground. Mr. Mottram, the superintendent, makes considerable use of these two charming Tulips. Next to these, and planted to the extent of nearly half of the foregoing, are Carmine Brilliant Dusart and Vermilion Brilliant, and following them closely in point of numbers are Keizer Kroon, Rose Luisante and Princess Marianne, with Cottage Maid, Duchesse de Parma, Mon. Tresor and Ophir d'Or. As the ground rises slightly from the entrance, is sheltered on one side by ornamental trees and has a large conservatory on the other the picture at Tulip time is very beautiful. Mr. Mottram, who personally controls Alexandra Park, has been fourteen years with the Corporation of Oldham. He began in 1912 at the Cemetery, succeeding to the registrarship there in 1914, and in 1921 became general superintendent of the town's parks and open spaces, which are about 180 acres in extent. Alexandra Park was purchased by the Corporation in 1860, at the time of the

Cotton panic. The provision of work for the resulting unemployed had much to do with the purchase; the park was opened in 1862, and is seventy-two acres in extent. We are indebted to Messrs. Dickson and Robinson for the photograph from which our supplementary plate has been reproduced.

Oranges in America.—The Orange growers of California and other south-western parts of the United States of America where Citrus fruits are cultivated, rely mainly on two varieties Washington Navel and The Valencia. It is interesting to learn* that the latter sort was introduced to America from the nursery of Messrs. T. Rivers and Son, Sawbridgeworth, who sent one importation direct from their nursery in 1876, and the other indirectly from Florida at about the same time. The label on the Florida trees was lost, and the variety became variously known as Hart's Late, Hart's Tariff, and Hart, but its identity with The Valencia was recognised later, and it is now generally given that name in the United States. The Washington Navel Orange, on which the commercial development of the Citrus industry in the South-west of U.S.A. was founded, was sent to California in 1873 by the United States Department of Agriculture. At the present time more than 270,000 acres are devoted to the growing of Oranges, Lemons and Grape Fruits in the South-western United States.

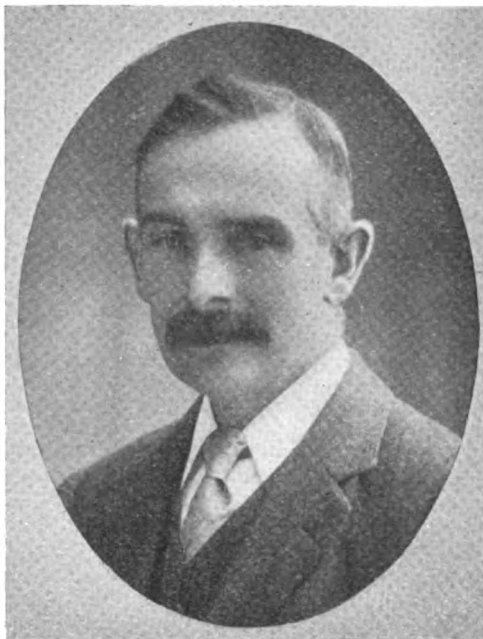
Gardener's Golden Wedding.—On October 12, a large number of friends met at Newtonairs, Dumfries, on the occasion of the fiftieth anniversary of the wedding of Mr. William Smith, head gardener at Newtonairs, and Mrs. Smith. Many tokens of goodwill were also received from their friends. Mr. and Mrs. Douglas Menzies kindly placed the drawing room of the mansion at their disposal for the reception of the guests, the Rev. J. A. Campbell presided at the repast, and the toast of continued happiness and prosperity to Mr. and Mrs. Smith was pledged with great enthusiasm. Mr. Smith has been head gardener at Newtonairs for the long period of thirty-three years. He was first at Jardine Hall, whence he went to Harviestoun Castle; afterwards to Castlemilk; Caldwell House; Ralston House, where he met Mrs. Smith; Largo and Moliken; and Broomlands, Dumfries, where he was for twelve-and-a-half years before going to Newtonairs. Mr. Smith is a gardener of exceptional ability, as has been shown by the numerous prizes he has taken at leading shows, and both he and Mrs. Smith are very highly esteemed by a wide circle. Their married life has been a very happy one, but they have not been free from the sorrows brought by time. Of a family of five sons and two daughters only four survive. Their eldest son was killed at Cambrai during the war, and another, who was for several years a foreman in the Royal Botanic Garden, Edinburgh, was appointed Superintendent of Holyrood Palace Gardens, Edinburgh, and held that post with great success until his death, seven years afterwards. Another son, Mr. Ivie Smith, is assistant to his father at Newtonairs. We congratulate Mr. and Mrs. Smith on this happy occasion.

Veteran Gardener.—Mr. Thomas Buck, who attained the age of 102 years on the 17th inst., is a keen horticulturist, and, according to the *Times*, every day, wet or fine, works in his garden, and has just finished digging his crop of Potatoes which he planted himself. Mr. Buck is a retired bank manager of Minston-in-Wharfedale.

Dahlias and Carnations at Antwerp.—The October meeting of the Antwerp Horticultural Society was chiefly concerned with Dahlias, of which there were some very fine representative exhibits, among others those of M. Nagels, of Wilrijk (to whom two prizes were awarded); M. Rivoire, of Lyons, whose newest varieties were shown by M. Nagels; and several amateurs. M. Emile Draps sent a magnificent display of perpetual Carnations which won a first prize, while the Service des Plantations, a department

of the Antwerp municipality, undertook the decoration of one end of the exhibition hall, gaining a special prize of a crystal vase.

Mr. C. Wakely.—Mr. C. Wakely, who holds the post of Horticultural Instructor to the East Anglian Institute of Agriculture, Chelmsford, has done much valuable work in the County of Essex. His early training was acquired in good gardens, and when of a suitable age he entered the Royal Gardens, Kew, where he gained experience in four of the departments, and at the time of leaving was in charge of the Tropical propagating pits. He took the fullest opportunities afforded at Kew for studying in both the practical and scientific branches of his profession, and when, in 1895, he applied for the position of horticultural instructor to the County of Essex, he was successful, and he has remained at Chelmsford ever since, doing work of a very varied character, and coming in touch with all classes of the community. He has done much to foster the spread of school gardens in Essex, and in this connection



MR. C. WAKELY.

he has held classes for the teachers themselves, where they have gained much valuable knowledge from Mr. Wakely. He has lectured in most of the towns and villages of the county, and given lectures on special subjects to various societies. His multifarious duties include the inspection of orchards, allotments and gardens in an advisory capacity, and growers in practically every part of the county of Essex are indebted to Mr. Wakely for valuable advice. He is one of the original members of the Horticultural Education Association and is still a member of the Committee.

A Floral Bonfire.—An explosion on board the steamer Jasuku Maru, in Hamburg Harbour, on the 1st October, started a fire which burnt to ashes several waggon loads of dried Statice destined for the United States. The flowers had only been placed on board a couple of hours previous to the disaster.

Holland County Potato Show.—The Holland County Potato Show to be held in Spalding on Thursday, October 29, will be officially opened by the Rt. Hon. Lord Brownlow, D.L., J.P. The public luncheon will be held on the day of the Show, at which Councillor J. W. Glead, D.L., J.P., Chairman of the Holland County Council, will preside. Amongst those who will speak at these functions are:—Rt. Hon. Lord Brownlow, Sir Daniel Hall (Chief Technical Adviser to the Ministry of Agriculture), Sir John Green, Sir Ernest Shentall, Mr. H. Titley (President of the National Federa-

tion of the Fruit and Potato Trades Association), Mr. E. J. Deal (Ex-President of the Horticultural Trades Association), Mr. A. W. Dean, M.P. for the Holland Division of Lincolnshire, Mr. H. Haslam, M.P. for the Horncastle Division of Lincolnshire, Mr. H. P. Carter (Chairman of the Holland Farmers' Union), and Mr. F. Dennis. Mr. Wm. Gilding, Chairman of the Show Committee, will preside at the official opening. Eight valuable Challenge Cups will be offered for competition, which will become the property of the exhibitor if won twice in succession or three times in all. Four Gold Medals and three Silver Medals are also offered for competition. Gold and Silver Medals are also offered for trade exhibits of Potatoes, and for general trade exhibits. Medals are also offered for new implements, or improvements to existing implements, used in the cultivation of the Potato. The Potato classes include seed, ware, collections and single dishes, and many of them are open to Great Britain. The Holland County Potato Show attracts growers and merchants from every part of the country. It is annually visited by large numbers of Scotch growers and merchants and a very large amount of "seed" is sold there.

New Biological Station in Brazil.—We learn that the authorities of the Rio de Janeiro Botanic Gardens have formed a biological station in the forest reserves of Itatiaia, for the study of local botany, the acclimatisation of foreign plants, and silviculture in general. Situated in the Itatiaia Mountains at a remarkable height (from 800 to 3,000 metres) above sea-level, with an abundant tropical and Alpine flora, the station is expected to render useful services to botanical research. The equipment includes a little laboratory complete with photographic installation, quarters for naturalists, etc. The extent of territory is immense, not less than 113 million square metres of open land and virgin forest.

Ayrshire Potato Trials.—The annual Potato-growing demonstrations inaugurated three years ago by Messrs. McGill and Smith, at the experimental station, Alloway Mill, Ayr, were inspected on Monday, October 12, by a large and representative company of merchants, farmers and representatives of the Board of Agriculture and the West of Scotland College. The efforts of the firm are being directed towards the production of a new early Potato with good cropping qualities. All the varieties shown consisted of new immune seedlings which were planted on April 8, and received the same treatment, the land being manured with proportionate quantities of sea-weed, waste lime, and ten per cent. Potato manure. Consequent on the cold, wet spell of weather in May, followed by a prolonged period of drought, many of the tubers on view were badly shaped. In order to determine the relative merits of the varieties a card vote was taken among the experts present, with the following results:—1, a selfed seedling from British Queen and Flourball; 2, a cross between Knight and Flourball, which received favourable mention at Philipstoun; 3, a cross between Majestic and Flourball. An Abundance × Majestic seedling, one of the best seedlings in the field at Ormskirk, tied for fifth place and although not placed on the list, a Templar × Majestic seedling was considered promising because of its large amount of ware and fine, healthy haulm. In the course of a discussion which followed the luncheon, Mr. Thomas Anderson, Director of the Board of Agriculture's Seed Testing Station, commented on the work of selecting the best varieties. A Potato had to be judged under almost innumerable circumstances, and the trials would probably have to extend over a period of ten years. Mr. J. Watson, who is in charge of the Ayr Experimental Station, called attention to the fact that the Potato which was second that day had always been in the first three, yet the English Board of Agriculture would not allow them to sell it as a new variety. He considered Abundance and Majestic two of the best varieties for crossing; Mr. J. Gibb, Bishopston, expressed the opinion that Epicure was one of the most vigorous Potatoes ever introduced, and that Kerr's Pink would top the acreage in Scotland

* Citrus fruit-growing in the South-west. U.S. Department of Agriculture. *Farmers' Bulletin* No. 1447. Washington, D.C.

this year. Speaking on behalf of the merchants, Mr. Gray said the three Potatoes that were really in front just now were Epicure, Great Scot and Kerr's Pink. The quality of the last crop, now coming into the market, was greatly helping its consumption, but as they were growing for the English market, it must be remembered that Kerr's Pink was not suitable for that purpose, and there might be a lot of this variety left on their hands this season.

Dispersal of the Seeds of *Lathraea clandestina*.—Mr. J. L. North, in *The Quarterly Report of the Royal Botanic Society*, states that seeds of *Lathraea clandestina* were propelled to a distance of twenty-seven feet when the capsules were squeezed by the finger and thumb. This, he states, may explain the spreading of the plant from the roots of a Beech tree, its original host, to other plants some forty feet away. There is a case on record of *Lathraea clandestina* having spread from the roots of a tree in Livermere Park—where the parasite was planted by Lady de Saumarez—in the course of a few years to a distance of more than forty feet from the original plant.

Presentations to Professor Somerville.—At the annual general meeting of the Royal English Arboricultural Society, Professor Somerville was presented with a suitably inscribed silver tray and a silver tobacco box, as a mark of the members' appreciation of his services as editor of the Society's *Quarterly Journal of Forestry* for many years. A silver trinket box was also handed to Professor Somerville for Mrs. Somerville. In making the presentations, the President Mr. Leslie S. Wood, stated that the members greatly appreciated the valuable work done by Professor Somerville, not only in forestry but also in many other branches of work.

The Scilly Flower Trade.—Flower growers in the Isles of Scilly are greatly interested in the building of a new steamer, to be named the Scillonian which it is anticipated, will be available for service before the end of January next. The new vessel, which will be 117 feet long, will have accommodation for a cargo of about 165 tons dead weight, and her hold will be large enough to accommodate fifty tons of flowers in boxes. With the present output of flowers the Scillonian will be able to ship all the Scilly growers' consignments without necessitating any being carried as a deck cargo, as has been inevitable in the past during the height of the season. The speed of the Scillonian will be twelve-and-a-half knots an hour.

New Trustee of the Gardeners' Royal Benevolent Institution.—The appointment of a new trustee necessitated the holding of a special Council Meeting of the subscribers to the Gardeners' Royal Benevolent Institution. This was held at Simpson's Restaurant, Strand, W.C., at 2.30 p.m., on Tuesday last. Owing to the indisposition of Mr. Leonard Sutton, Mr. A. J. Wood presided and Mr. Bernard Crisp, son of the late Sir Frank Crisp, was duly elected as the new trustee of this useful horticultural charity.

Henry Eckford Memorial Medal.—At a meeting of the trustees of the Henry Eckford Memorial Fund, held prior to the annual meeting of the National Sweet Pea Society, on Tuesday last, the Henry Eckford Memorial Medal for the year 1925 was unanimously awarded to Mr. Andrew Ireland, of Messrs. Ireland and Hitchcock, Marks Tey. Mr. Ireland has been intimately associated with the raising and cultivation of Sweet Peas for many years, formerly, when in the employ of Messrs. Dobbie and Co., and latterly in his own business at Marks Tey. He has also been directly connected with the work of the National Sweet Pea Society since its institution in 1900, and in 1924 he was Chairman of Committee. The permanent trustees of the Henry Eckford Memorial Fund are Mr. J. M. Bridgeford, Mr. Hugh Dickson and Mr. Charles H. Curtis, and with them are associated the President and Chairman of the National Sweet Pea Society and two others chosen at the annual meeting to represent the members. For the ensuing year the representatives are Mr. E. W. King and Mr. Andrew Ireland.

When the fund was raised to commemorate the late Mr. Henry Eckford, a sum of £70 10s. 6d. was handed over to the trustees, who have to provide and award one gold memorial medal annually. Donations received since the formation of the trust amount to £13 8s. 6d., and accrued interest to £3 8s. 6d., making a total sum to date of £87 7s. 6d. Dies and medals have cost £30 19s. 3d., so that there is now a balance of £56 8s. 3d. in the hands of the trustees. To ensure the continuity of the Memorial, a sum of not less than £100 is needed for investment, so that the income therefrom would provide for the annual medal. Donations should be sent to Mr. A. C. Bartlett, Secretary N.S.P.S., 19, Bedford Chambers, Covent Garden, W.C., or to Mr. C. H. Curtis, 5, Tavistock Street, Covent Garden, W.C.2.

Cattle Poisoned by Prunings of Evergreens.—A plaintiff was recently awarded £40 damages in the Dublin Castle court for loss sustained through the death of a bullock that was stated

"Gardeners' Chronicle" Seventy-five Years Ago.—*Select Plums.*—The Reine Claude de Bavay, mentioned in your report of Mr. Rivers's nursery, is a very desirable Plum, but certainly not equal to the Greengage in flavour. I lately had an opportunity of examining specimens of this Plum which had been grown in France. These were more oval-shaped than the Greengage, and the colour was a dark yellowish-green. The flesh was not very juicy and wanted that briskness which makes the Greengage so much liked; this, however, might in some degree be ascribed to the long journey and bad packing. Its season appears to be the beginning of October, as the fruit I saw arrived in England about the 10th. Two other Plums new to me have also come under my observation this season. These are chiefly valuable for their size, which is enormous, each of them being larger than the white Magnum Bonum, and similar in shape, but of a dark purple colour. One is supposed to be the "Queen Mother," the other is a seedling, said, although no doubt

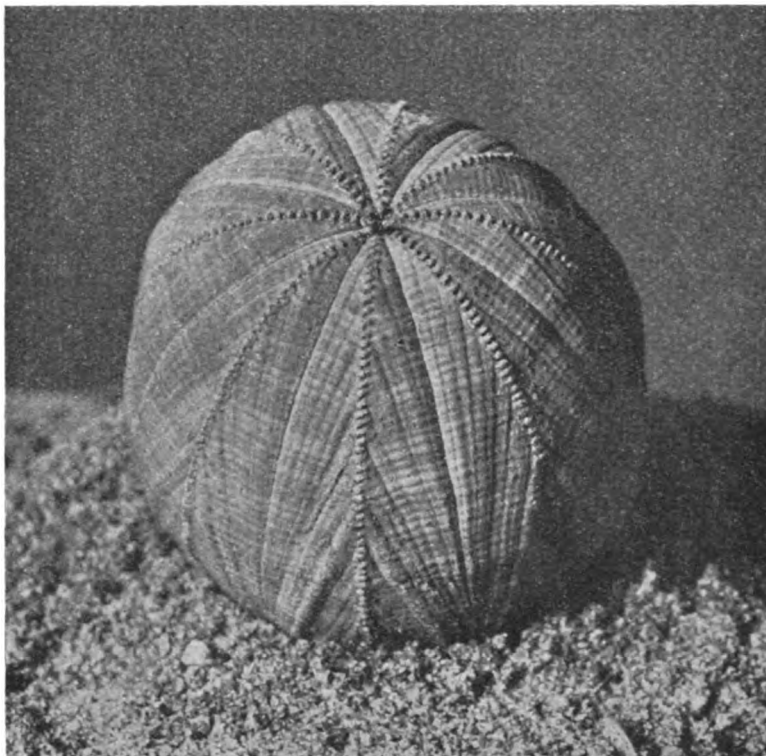


FIG. 131. EUPHORBIA OBESA.

(see p. 328).

to have been poisoned by reason of the negligence of the defendant's servants, who, it was alleged, threw garden refuse containing cuttings of Box and other evergreens in the corner of a field in which the plaintiff's cattle were grazing. A veterinary surgeon stated that he found symptoms of poisoning in the stomach of the animal, and that Box and Laurel, which he found in the dump in the field, were, in his opinion, deleterious. It is commonly held that Yew is fatal to cattle, but we do not remember a case in which either Box or Laurel was held responsible for cattle poisoning.

Appointments for the Ensuing Week.—Tuesday, October 27: Newcastle and District Horticultural Mutual Improvement Society's annual meeting and lecture. Wednesday, October 28: Croydon Chrysanthemum Society's show (two days); Portsmouth Horticultural Society's show (three days); Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Mitcham, Tooting and District Horticultural Society's meeting; Sheffield Chrysanthemum Society's meeting. Thursday, October 29: Holland County Potato Show, at Spalding. Friday, October 30: Imperial Fruit Show at Holland Park Hall (eight days).

mistakenly, to have been raised from an Apricot stone. I strongly recommend to Plum growers the variety called "Kirke's" in the Horticultural Society's Fruit Catalogue, which is the best purple Plum I am acquainted with. It is of good size, very handsome and of excellent flavour. The Royal Hative is also a capital sort; so likewise is the Reine Claude Violette. These three, with the Precoce de Tours for earliness, and the Ickworth Imperatrice for lateness, are all the purple dessert Plums than any one need cultivate. Of light-coloured Plums, the Washington, Jefferson, Greengage, Reine Claude de Bavay, and Golden Drop are the best; and the above ten sorts will be found amply sufficient for the supply of any gentleman's family. For culinary purposes, the Early Orleans, Goliath, Denyer's Victoria, and white Magnum Bonum may be recommended. The last-named makes an admirable preserve—equal to Apricot. There are better Plums than Denyer's Victoria, but I include it on account of the hardness of its blossoms, which withstand cold better than those of most other kinds. For preserves and tarts late in the season, the Shropshire Damson and the Winesour should be grown. *J. B. W., Gard. Chron., October 26, 1850.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Aerides, *Saccolabium*, *Angraecum*, and *Vanda*.

—Although many of these Orchids never cease to make leaf growth, it is important that they should be given a short period of rest. When the plants are in active growth sufficient moisture should be afforded them to keep the Sphagnum-moss on the surface in a green, fresh condition, but the supply of water at the roots should now be gradually reduced. From now onwards through the winter the moss should be allowed to dry to a greenish yellow colour before water is applied. Many *Angraecums*, such as *A. sesquipedale*, *A. Eichlerianum* and *A. pellucidum* are in full growth, and still require frequent applications of water. *A. eburneum* is developing its flower spikes and should be kept moist at the roots. Towards the end of the present month the tall-growing *Vandas*, including *V. tricolor* and *V. suavis*, may be repotted or afforded fresh surfacing materials. The plants will now commence to root freely, so that the foliage will be less likely to suffer from the effects of root disturbance than would be the case if the work was left over until the spring. Specimens that are well-furnished with leaves should not be disturbed by repotting, unless a larger receptacle is needed, but some of the old compost may be picked away from the surface and new substituted. Plants that have lost some of their bottom leaves should be taken out of their pots, and if they have live roots some distance up the stem, so much of the lower part of it may be removed as will bring the leaves, when the plant is again placed in the pot, nearly down to the rim. In repotting, after standing the plant in the pot, place some medium-sized crocks around the base, and work small crocks and Sphagnum-moss between the roots near the top of the receptacle, finishing with a layer of clean, picked Sphagnum-moss over the surface. Secure the plant to a neat stick. No water should be applied for a few days, when the materials should be soaked, after which, whenever the surface appears dry, a light sprinkling with a rose-can will suffice.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Propagation.—The great secret of success in the propagation by cuttings of a large number of our hardy trees and shrubs is the selection of suitable cuttings, and inserting them very firmly in sandy soil as early as practicable after the completion of the current year's growth. In many cases well-ripened shoots only are needed; sometimes it is better to take the cuttings with a heel of older wood, but I consider earliness and making the cuttings firm in the soil are equally important factors. I have had such unexpected success with so many hard-wooded subjects by inserting cuttings at about this time, that I am inclined to think that there is only quite a small proportion of them which will not respond to the treatment, provided always that the wood is in suitable condition. This may not always be easy to determine, but usually just before, or at the fall of the leaf, it appears to be most suitable, and one can work for safety by inserting two small batches at intervals of about fifteen days.

Root Cuttings.—The propagation of herbaceous plants by means of root cuttings is not practised nearly so extensively in private establishments as in nurseries, and yet this method has many advantages. It is not unusual to propagate the coarser-rooted plants by this means, but it is seldom applied to the finer-rooted ones. The latter plants are equally amenable to the

system, and where mass propagation is needed much time is saved. Further, in many cases stem cuttings may be infected with disease, while root cuttings from the same plant are clean, and the system may thus be a powerful aid in the control of diseases.

Tuberous Begonias.—These valuable bedding plants derived much benefit from the rains of July and August and have seldom been more satisfactory than during the present season. They should now be lifted, retaining a reasonable amount of soil on the tubers, and be packed closely together in a frame for a few weeks to finish their drying off process gradually.

Spring Bedding.—So soon as the summer bedding plants have been cleared from beds or borders the soil should be thoroughly prepared for the reception of spring bedding subjects. Where planting schemes are extensive it is very important to follow up the clearance of beds quickly so that the spring flowering subjects may establish themselves before winter sets in. Wallflowers are generally most effective when planted in large beds by themselves. Polyanthus also are very effective when planted in large masses. Where Tulips or other bulbs are grown dwarf carpeting plants are often used to cover the soil, with good effect. Suitable subjects for this purpose are Arabis, Aubrietias, Myosotis, Pansies and Violas, and very effective colour schemes may be carried out by arranging the planting so that the colour of the carpet plant contrasts with that of the flower overhead.

Iris pumila.—The dwarf Flag Iris is not often met with in gardens, yet it is extremely useful for narrow borders and small beds. The flowering season is in advance of that of the ordinary Flag Iris, and it should be more extensively planted.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE HOLROD, Westonbirt, Tetbury, Gloucestershire.

Perpetual-Flowering Carnations.—The plants which were housed during September will have made considerable growth since that time. If shortage of room at housing time necessitated close staging of the plants, this should now be obviated so far as possible to prevent them from becoming weakly. Disbudding must be carefully attended to as well as the removing of surplus lateral growths, leaving two or three of these at the most at the base of each flowering branch. Keep the atmosphere of the house buoyant by careful ventilation night and day, making use of both top and side ventilators, maintaining a steady circulation of warm air throughout the house by means of the hot-water pipes at night and during damp and sunless days. The plants may, with advantage, be given a slight top-dressing of a good Carnation manure about once in three weeks, but high feeding must be guarded against, one result of this frequently being the production of a higher percentage of flowers with a burst calyx than would be the case under normal treatment.

Lily-of-the-Valley.—If these flowers are likely to be in demand between now and next January, retarded crowns should be ordered from the nurseryman forthwith. They may be had in flower within twenty-one to twenty-eight days of their removal from the cold storage, so that orders should be placed in good time to allow for their despatch on any given date. The crowns should be potted or boxed immediately on arrival and receive a thorough watering afterwards. Cover the crowns with some fresh, green moss, and place the pots in a darkened pit in a temperature of about 50° to 55°. After a few days, the temperature may be raised some five or ten degrees if it should be desired to hasten the plants into flower.

Potting Materials.—The importance of having in hand at all times of the year a sufficient supply of loam which has been stacked for several months should not be overlooked, and the present is a good time to replenish the stocks,

when it can be procured from the pastures under drier and better conditions than in mid-winter. The turves should be stored outside in stacks of such dimensions that they may be easily covered with some temporary roofing to ward off heavy rains.

Leaf-Mould.—A good supply of clean, fresh Oak and Beech leaves should be collected and stored for next season's use. A sufficient quantity from the residue of last year's collection for use during the winter should also be placed under cover.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Ripe Grapes.—Much care is required to keep ripe Grapes in first-class condition. The temperature of the vinery should not fall below 45°, and it will be advisable to keep the pipes warmed sufficiently to promote a buoyant atmosphere. In damp weather close the front ventilators and only open the top apertures sufficiently to cause a free circulation of air. It is not safe to remove the hexagon netting yet, as wasps and flies are still active when the sun is bright. It is a good plan to cover the inside border with dry mats or clean straw which will absorb the superfluous moisture given off from the border. Collect all fallen leaves daily, as these give off moisture if allowed to lie about the house. Do not moisten the floors or trellis: it is better to just sweep the dry floors, but care must be exercised that no dust is created. Go over the bunches very carefully and remove any decayed berries at once, as these will soon cause a bunch to become useless. Should Grapes in the latest houses be not quite finished, give the vines every encouragement to ripen their crop as speedily as possible. Maintain a warm temperature, and if there are signs of mildew, use the sulphur vaporiser at once. I prefer this to the system of sulphuring the water pipes at this season. No other plants should be placed in the house until the crop is finished. In small establishments where there is not sufficient room to house plants without using the late vineries the grower will find great difficulty in keeping the Grapes well, and would be well advised to cut and bottle the bunches so soon as they are fit. It will be found an advantage in finishing white-skinned Grapes to tie the leaves back from the bunch to allow all the light and sun to reach the berries.

Cucumbers.—Cucumbers planted last month are making good growth. It will be found advisable to go over the plants weekly, tying, stopping and regulating the shoots. Top-dress the roots on frequent occasions with the following compost warmed to the temperature of the house:—two parts good fibrous loam, one part leaf-mould and a liberal sprinkling of wood-ash and soot. Keep a sharp watch for pests, and fumigate the house on the first signs of any. If mildew appears use the sulphur vaporiser at once, bearing in mind to keep the house drier for several days after the operation. Cut the fruits in a young state and remove all deformed ones. Very little air is necessary at this season, in fact, I get better results from closed houses. Maintain a night temperature of 65° without unduly heating the pipes. Damp the house last thing at night and several times during the day, according to the weather, and always use warm water for moistening the borders.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Strawberries.—The newly-planted Strawberry beds should be made neat and tidy, removing weeds, and runners. It is too late in the year to use the hoe with any good results; weeds should be hand-pulled and the ground afterwards lightly forked over.

Propagating Small Fruits.—Make preparation for getting the ground in order for receiving cuttings of Red and White Currants. In selecting the cuttings choose the ripest shoots possible, even in length and size. Those of medium thickness are the most suitable, and the cuttings should be made about ten inches to twelve inches long. Cut the shoot square at the bottom end and rub off the lower buds, leaving five or six above the surface. Only one variety should be dealt with at one time to prevent getting the sorts mixed, and each should be plainly labelled. Take out a trench six inches deep, stretching a line across the plot of ground to ensure straightness. Place the cuttings in the trench six inches apart, fill in the trench and tread the soil firmly. The rows should be fifteen inches to eighteen inches apart, according to the ground available. Gooseberry cuttings may be treated in a similar manner. After the work is completed, fork the ground lightly between the rows to ensure a neat and tidy appearance. The cuttings of Black Currants need not have the lower buds rubbed out unless single stems are required, a method of training I do not advise unless the bushes are required for training against a north wall.

Propagating Figs.—Offsets may be taken from the old trees which frequently throw up a quantity of young growths from the base of the stems. Take them off with as many roots as possible, and plant them in a trench the same depth as advised for small fruits, but wide enough to take the roots without cramping them. The offshoots should be placed twelve inches apart in the trench, and in rows twenty inches asunder, or two feet if the ground can be spared. Make them very firm in the soil, and leave a fine tilth on the surface.

Planting Figs against Walls.—The Fig requires to have its rooting area restricted. It is time wasted to plant them in heavy soils, like Plums or Pears, for they would grow much too strongly to be fruitful. They may be planted in a brick enclosed area; for a wall ten feet by thirteen feet, pits two feet six inches deep three feet wide and five feet long, will give ample room for the roots. The bottom of the pit should be covered with a layer of concrete, and a four-inch brick wall built up to the level of the ground, leaving the space of half-a-brick at the bottom for water to drain away. Place drainage materials to a depth of six inches at the bottom, cover this with a layer of loamy turf placed grass side downwards and then fill the hole with a mixture of good fibrous loam, mortar rubble, finely-broken brick, and wood ash, these last three ingredients at the rate of one-part each to six of loam. In filling in the compost make it very firm, and work some of the finest soil around the roots. The pit may be filled to the top, for the soil will sink a little and leave a margin for watering when needed.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Salads.—Much care and attention must now be given to salads of all kinds to ensure continuous supplies, and especially in those establishments where a daily supply is needed. Lettuces growing in cold frames will require constant attention, as it is not always possible to give sufficient ventilation to prevent damping. To obviate this trouble all leaves showing any signs of damping should be removed, and the soil hoed continually to keep the frames in as sweet a condition as possible. Any plants of the tender varieties that have formed good heads and are still in the open should be lifted with good balls of soil and put in a place of safety to be used before those growing in the frames. Continue to lift plants of Endive for blanching in the Mushroom house as required, or the plants may be covered with inverted flower pots, covering the drainage hole to exclude the light. A supply of Radishes, Mustard and Cress may be maintained by sowing seeds fortnightly in gentle warmth. The few extra

rows of autumn Onions that were recommended to be sown for salad use may now be drawn on as thinnings.

Tomatos.—Plants intended to furnish supplies of fresh fruits through the winter will now require very careful treatment to prevent attacks by disease. Admit air when the weather is favourable. By the judicious use of fire-heat, the plants will be kept healthy. Do not feed the plants much at this time of the year; I prefer to use stimulants only when the fruits are swelling. Pollinate the flowers on all favourable opportunities about noon from now onwards. Plants intended for cropping early in spring should be transferred to sixty-sized pots, and another sowing should be made in the course of a few days to raise a successional batch of plants.

Celeriac.—This vegetable will have practically completed its growth and the roots should be lifted and clamped in sand. Trim off the leaves

effects from a distance, spring pruning should be resorted to as this has the effect of producing a closer growth, and giving, at a distance, a more vivid colour than would have resulted if the plants had been allowed to grow at will. Other good Dogwoods are *C. florida rubra* and *C. alba elegantissima*, both of which are suitable for grouping, and will thrive in exposed positions. They require a rich, moist soil to ensure the best results.

Herbaceous Borders.—As the foliage of the various plants decays, the stems should be cut down and removed in order to maintain as tidy an appearance as possible. Mental notes may also be taken where alterations in the border are contemplated. Many hardy herbaceous plants may be lifted shortly, divided, and replanted. The ground should be well enriched with manure, as most herbaceous plants are gross feeders, and not being replanted annually, require all the assistance possible. In replanting

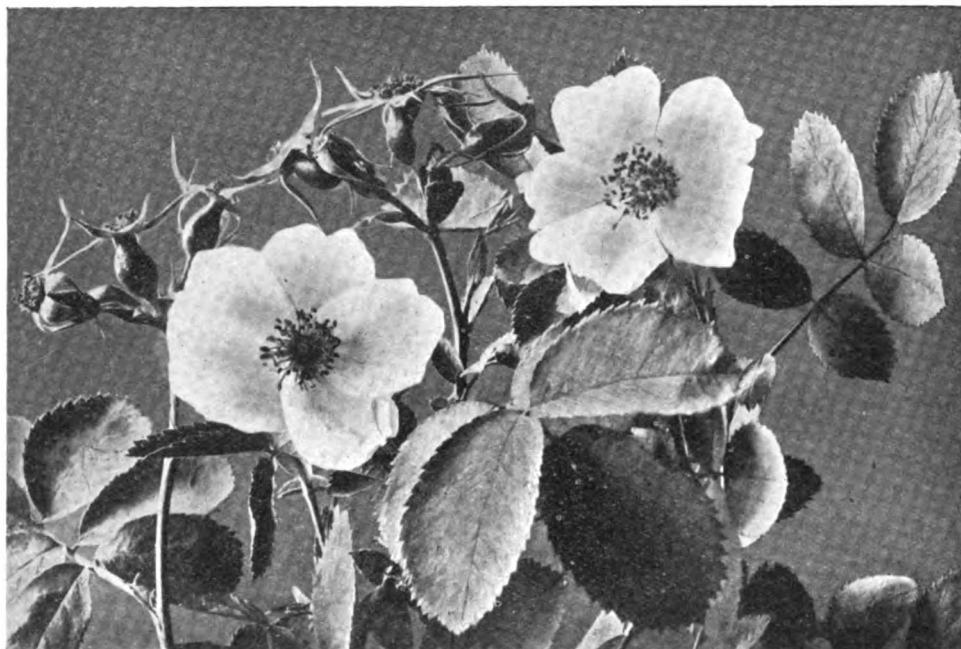


FIG. 132.—ROSA BEGGERIANA (see p. 327).

and the majority of the fibrous roots before storing the roots. Celeriac is especially fine this year and the specimens larger than usual. Some growers prefer to leave the roots in the ground for some time to come, but the policy of clearing the crop from the ground so soon as possible is best as it permits of trenching the soil early.

Jerusalem Artichokes.—When the stems of this vegetable have completed their growth, they should be cut down and burned. A few of the tubers should be lifted ready for use when the ground is frozen so hard that digging is impossible, but the bulk of the crop may remain in the ground for use as required. The lifting of this crop should be done carefully, as even the smallest tubers grow in the spring, and probably result in injury to some other crop.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Cornus.—The autumn tints of *C. sanguinea* provide a wealth of colour, and it is a useful subject for forming a group, being attractive in winter, especially when snow lies on the ground, the bright red branches making a beautiful contrast. To obtain good colour

care must be observed when dividing the growths and clumps not to damage them with the spade. Replant only the outside portions of the clumps.

Border Chrysanthemums.—Stools of these required for propagating stock should be lifted and placed in boxes. A cold frame will be a suitable place for them for the present. When lifting the plants do not cut the stems hard back, but leave at least from ten inches to twelve inches of stem to each stool. Certain border varieties are very shy in producing shoots suitable for use as cuttings, when they are cut back too hard. Keep a sharp watch for slugs that may be present on the plants when they are lifted; these pests, if brought in with the stools, will cause a lot of damage to the young growths. Care must be also observed to attach labels to each variety.

Mushrooms.—Procure and make ready horse-manure in the usual method for the making of Mushroom beds that may be expected to crop at Christmas. Beds formed now should be a little deeper than those formed earlier as this extra depth will ensure a more uniform heat being maintained. Beds that have been in bearing for some time may be assisted to continue bearing by watering them with tepid water to which has been added salt at the rate of one ounce to every three gallons.

BULB GARDEN.

SOME LESSER-GROWN BULBOUS PLANTS.

THERE is a fascination in growing many of the less well-known bulbous plants, and the grower who plants year after year only those kinds that he knows well loses one of the greatest joys of cultivation. To grow something that one does not know gives intense interest, and the bulb lover who plants something new to him every year, not only enjoys the interest, but regularly increases his knowledge. As the bulb-planting season is now at its height a few notes on bulbous plants less commonly grown than others may be of interest to readers.

ALLIUMS.

THE Alliums have a long history and many uses, most of which are dietary rather than decorative. There are a few smart members of the family, however, which, although not appealing with great force to everyone, are, nevertheless, admirable in their way, and add materially to the beauty of our gardens in the late spring months. They are easily cultivated and will thrive almost anywhere, while for naturalising they are excellent.

A. albo-pilosum is a striking species producing massive umbels of lilac flowers in May and June. *A. azureum* is a very pretty species with intense blue flowers which usually do not appear till July. *A. Moly* is a handsome, border plant bearing umbels of bright yellow flowers in May and June. *A. neapolitanum* is probably the best known member of the genus; it produces its graceful heads of white flowers in abundance, is useful for cutting and is a charming subject for naturalising in the shady glades of the woodland in association with our native Bluebell. *A. Rosenbachianum* is a tall-growing species producing large, showy umbels in June and July.

BRODIAEAS.

TTHIS beautiful family of North American Liliaceous plants does not appear to be very widely grown. Possibly this is due to their doubtful hardiness; but if intelligently treated they are quite hardy and such gems for the border and rock garden that they should be better known, for they have few superiors. A sheltered position and a light, sandy soil are their chief requirements, and the bulbs need not be disturbed for several years.

B. coccinea (*Brevortia coccinea*) is a handsome plant bearing graceful umbels of long, tubular, blood-red flowers. *B. grandiflora*, a charming dwarf species, has rich, violet-blue flowers. *B. laxa maxima*, a very decorative plant bears rich, dark purple flowers; *B. Howellii*, with white flowers, and the late-flowering *B. Oruttii* with light blue flowers are also amongst the best kinds.

BULBOCODIUM VERNUM.

THIS gem amongst spring flowers is useful for the rockery or the border. Its rosy-purple, Crocus-like flowers appear with the earliest of bulbous plants and make conspicuous masses of bright colour.

CALOCHORTUS.

THESE lovely Californian plants are uncommonly beautiful and worthy of the widest recognition by lovers of hardy plants. The flowers are very large, exquisitely coloured, and few Orchids can excel them in beauty. Their light, graceful growth and comparatively long season of flowering make them admirable subjects for decorative purposes. They require a sunny position, light, sandy soil, and preferably, slightly raised beds to ensure perfect drainage.

C. macrocarpa is a splendid species bearing large flowers of a beautiful pale lavender with dark centre, banded green. *C. citrinus* has lemon-yellow flowers with a dark maroon blotch on each petal and a speckled maroon centre; it is excellent for cutting. *C. vesta* is a very free-flowering variety of great beauty; its large flowers are freely borne on long stalks, and its colouring is distinct and attractive.

C. Plummerae bears a branching spike of

large, soft, lavender flowers, lined at the base with silky, golden hairs, and *C. Benthamii*, one of the smallest of the genus, has bright yellow flowers with a blotch at the base.

CHIONODOXA.

IN this genus we have spring flowering bulbs of the highest order of merit, of the hardest constitution, of the easiest culture, and when established in sheets of blue they create an attractive picture very early in the year, which can hardly be excelled. Associated in the rock garden with the early, small-growing *Narcissi* they are strikingly effective, and for naturalising they are eminently suitable.

C. Luciliae, the Glory of the Snow, with brilliant blue flowers and clear white centre, is a charming subject, and the one most largely grown, but the true *Gentian* blue of *C. sardensis* is even more striking from the distant view. *W. Auton.*

(To be continued.)

HARDY FLOWER BORDER.

HELENIUMS.

EXTREMELY serviceable, free-flowering, and not in the least fastidious, the Heleniums should figure prominently in gardens where the summer season and onward into the partridge month must be reckoned the most important period of the year. For all through July to September's end Heleniums produce flowers of brightness not in driblets, but in sheaves.

The pity is, too many gardeners still adhere to old and often poor forms of the well-known kinds, such as *H. autumnale*, gaunt, towering aloft with small flowers on thick stalks; *H. Bigelovii* and *H. Bolanderi*, old stocks of which throw their stems about in sprawling fashion, covering a great amount of space, and then turning upward with a crook in the stem that robs the flowers of all utility for cutting; or again, the old *H. grandicephalum striatum* with wizened petals that should be chestnut and gold, but are only rusty brown and sickly yellow.

None of these should longer be harboured except they be of the finest selected forms, for we have now a noble race of charming, bold, erect and richly-coloured varieties that rank among the *elite* of the herbaceous border.

Helenium autumnale superbum is a refined form, but *H. a. Gartensonne* is still better, and it is folly to nurse prejudice against a flower because of a mere name. *H. Bigelovii aurantiacum* is a grand stride forward from the old type, but better than any form of *H. Bigelovii* is *Helenium Madame Canivet*, a hybrid which bears an immense quantity of blooms on firm, erect stems, three feet high. The shade of yellow in the petals is the most pleasing colour I know, rivalled, it seems to me, only by the particularly clear, clean tint of the good old-fashioned Evening Primrose, while the rich mahogany brown of the domed disc creates a striking and pleasing contrast. This is one of the newest of Heleniums, originating from Mr. William Sydenham's nursery at Melbourne, where it starts to flower in the first few days of July and goes on and on until it finishes with the Michaelmas Daisies.

Of the cupreum tribe there can be no doubt *Crimson Beauty* is far away the best. It deserves its name, for in good porous soils with some chalk and a sunny position its colour seems to try to match Red Currants when they are fully ripe. There are too many indifferent forms of *H. cupreum* in cultivation, and they should be supplanted by *Crimson Beauty*.

H. pumilum magnificum is one of the finest dozen border flowers in cultivation. Plants that do not come up to that degree of merit may be written off as untrue or renegade. There are, I know, many of these, which betray that objectionable "floppy" habit of growth, but the real thing is grand. Why *H. pumilum* should be classed under *H. autumnale* I never could understand; at any rate, it begins to flower long before the species *autumnale*,

and is altogether a superior plant. Wyndley, Riverton Beauty and Riverton Gem are all good varieties, and should stand from gardens both *H. grandicephalum* and *H. Bolanderi*.

GEUMS.

WHEREVER hardy flowers are grown with any pretension of being up-to-date, Geum Mrs. Bradshaw is sure to be found, and in most gardens now its near companion will be Lady Stratheden. The merits of these two excellent varieties require no emphasis, but even with both in the border there may well be found room for a few others which, even though they boast not the widespread popularity of the large double-flowered varieties, may at any rate claim to possess colour even purer, richer and more striking. *Geum montanum maximum* outshines the Buttercup, and never yellow looked finer than in the flowers of this Geum over the dark, but glossy, leathery-looking leaves which are different from, and more luxuriant, than any other Geum.

G. Heldreichii splendens, the best variety of this species, is rich orange, of almost tangerine colour, and the flowers are larger and more perfect in outline than in the normal type, or even the older improvement named *magnificum*. Perry's variety of *G. miniatum* is likewise an enlarged and more showy form than the ordinary *G. miniatum*, and here we have a colour which some describe as bright terracotta and some as brick-red. It is really much prettier than either of these terms would lead one to suppose, and "Gerbera red" will convey to those who know *Gerbera Jamesonii* a good idea of what the true Perry's variety of *G. miniatum* is like. When, for the sake of cheap trade, unselected seedlings are sold, the flowers somewhat fall short of the true form. That same complaint applies very forcibly to Geum Mrs. Bradshaw, some very inferior stocks of which have, unfortunately, been widely distributed.

G. bulgaricum is a free-flowering plant and its individual flowers are of considerable size, the colour being deep yellow with a tendency to orange. My final word shall be of Geum Borisii, a recent introduction, and to my mind, one of the finest of hardy plant novelties of recent years. Its form is so perfect, so circular in outline, smooth and unruffled in petal, that one feels it should have belonged to the days when the merits of flowers were estimated by "points." Its colour is again one that has overtaken powers of description, for orange-red, or orange-scarlet sound common-places when one knows the distinctive glow and intensity of the colour that is in *G. Borisii*; but the still more notable point of merit in the plant is that it is never out of bloom from quite early in spring until the last days of autumn merge into winter. *A. J. Macself.*

ACONITUM FISCHERI.

THIS fine Monkhood is one of the most valuable of plants for the herbaceous or mixed border, its bold spires of enormous blue flowers and handsome foliage making a refreshing contrast with the warmer hues of autumn. Further, being of medium stature and very stout of stem, it is better equipped for withstanding rough weather than taller kinds, such as *A. Wilsonii*. Good as the latter undoubtedly is its colour is not so attractive as that of *A. Fischeri*, and I have found it more fastidious as to soil.

Both of these Aconites repay the grower for good cultivation, and they should be afforded liberal top-dressings early in the year. The clumps, moreover, need lifting, dividing and replanting in prepared soil occasionally, but I do not do this oftener than is absolutely necessary, for the plants resent root disturbance and take some time to recover their full vigour.

Some well-grown masses of *A. Fischeri*, seen a few days ago behind several large plants of the creamy-yellow *Anthemis tinctoria* var. *E. C. Buxton* (in full bloom a second time) made a most arresting display of colour. *A. T. J.*

ALPINE GARDEN.

ERODIUMS IN AUTUMN.

SEVERAL of the *Erodiums* may always be relied on to provide a generous crop of blossom in the autumn. *E. amaranthum* is perhaps the most beautiful of these, its very hoary, delicately crimped foliage being surmounted by several six-inch, branching flower stalks bearing unusually large, milk-white blossoms of singular loveliness. Another white species that is nearly always in bloom, be the weather what it may, is the familiar *E. chamaedryoides* (Reichardii) which, with its charming pink form, must be numbered among the very best of rock plants.

The grey-leaved *E. Gussonii*, an Italian species is also a reliable late bloomer here, its flowers being a rich pink with lines of a darker shade. No less can be said of *E. guttatum*, which bears a four-inch sheaf of bloom stalks above its silky, grey-green leaves, the former each terminating in three or four pinky-white flowers. *E. trichomanefolium* is yet another of those which stay to see the season out, and it is, as a rule, the first to appear. Indeed, this eastern species is, among all the grey-leaved Heron's Bills, perhaps the most tolerant of our humid climate.

E. Manescavii and *E. hymenodes* are not among the choicest of their race, but they are both to be trusted to provide colour during fine autumn weather, and they are perfectly hardy and easy to grow. The fern-like foliage and magenta-crimson flowers of the former are well-known, but *E. hymenodes* is not often seen in gardens. There is much of the *Pelargonium* in its large, rounded, downy leaves, and the conspicuous pink and white flowers which are yielded with such profusion not only in a warm autumn, but throughout early spring and summer. Seedlings of both these species develop freely in the garden. J.

TREES AND SHRUBS.

EFFECTIVENESS OF THE AZALEA AS A STANDARD.

THE Azalea is remarkable as a garden plant for its extreme floriferousness, and, as will be seen from the illustration, Fig. 133, the flowering is in no wise lessened when the plant is grown in standard form.

The particular plant illustrated is Fielder's White variety, and has been grown for some thirteen years in the open in the Japanese Garden at Warren House, Kingston Hill. Mr. W. J. Penton, the gardener, informs us that it has always given satisfactory results. It was formerly planted out, but it was lifted during the spring of 1921 and placed in a tub for the purpose of indoor decoration, and it has been growing in the tub since. In the spring of this year there were over 3,000 blooms expanded at one time, and it was the admiration of all who saw it. The stem is four feet tall and the head measures seven feet six inches in diameter.

CLERODENDRON TRICHOTOMUM.

THIS very fine shrub is one of the prettiest and most interesting of plants in autumn. A well-drained, deep, loamy soil and a position somewhat sheltered from the north and east, albeit open to the maximum amount of sunshine, are essentials in the successful culture of this *Clerodendron*.

As an isolated specimen, this shrub is very beautiful, and likewise a generously-furnished group will be an object of beauty in the September garden. The calyx is red and inflated, the corolla white. The cymes are loose, terminal, long-stalked and branched. The leaves are stalked, ovate, tapering at both ends and serrate. The average height of the shrub is about six feet. The leaves, when crushed, have a curious and not unpleasant odour, somewhat reminiscent of Almonds; I have heard some people describe the odour as offensive, while

others find it very pleasant. This deciduous *Clerodendron* was figured in *Bot. Mag.*, t. 6561. *Ralph E. Arnold.*

ST. DABEOC'S HEATH.

(*DABOECIA POLIFOLIA*).

REFERENCE to this charming Heath on p. 286 interested me. In the Whiteley Village here, there are some very fine beds of all colours which have been gorgeous this season, and when I state that these beds are 150 yards long, 87 yards wide and each bed contains nearly 2,000 plants, and each plant is one-and-a-half foot through, some idea of the great display of colour will be obtained. One of the beds contains the variety alba and the purple variety, and the effect is very beautiful. Another large bed of *Erica carnea* is teeming with buds which will soon be opening, and will be a blaze of colour all the winter. This in its turn will be followed by *E. mediterranea* of which the bed contains about 2,000 fine plants. I have

I am also inclined to think that a good many of the *Olearias* need a deal more moisture than their appearance and origin might seem to suggest. *O. semi-dentata* has, at any rate, made rapid strides since being transferred from average loam to moister soil in the kitchen garden. It would be interesting to hear the experience of others with these shrubby *Compositae*. *A. T. Johnson, Ro-Wen, Tal-y-cafn, North Wales.*

NYSSA SYLVATICA.

IN the note of the above ornamental tree on p. 269 no mention is made respecting its habit of growth. There was a very remarkable specimen of *Nyssa sylvatica* growing in the grounds of Munden, near Watford. The growth of this tree was very rapid during the years it was under my observation. The habit of the tree was pendent. Branches were trained on a frame of iron which was erected over an adjoining walk. The foliage, during the autumn, was very brilliant and attractive. This tree is,

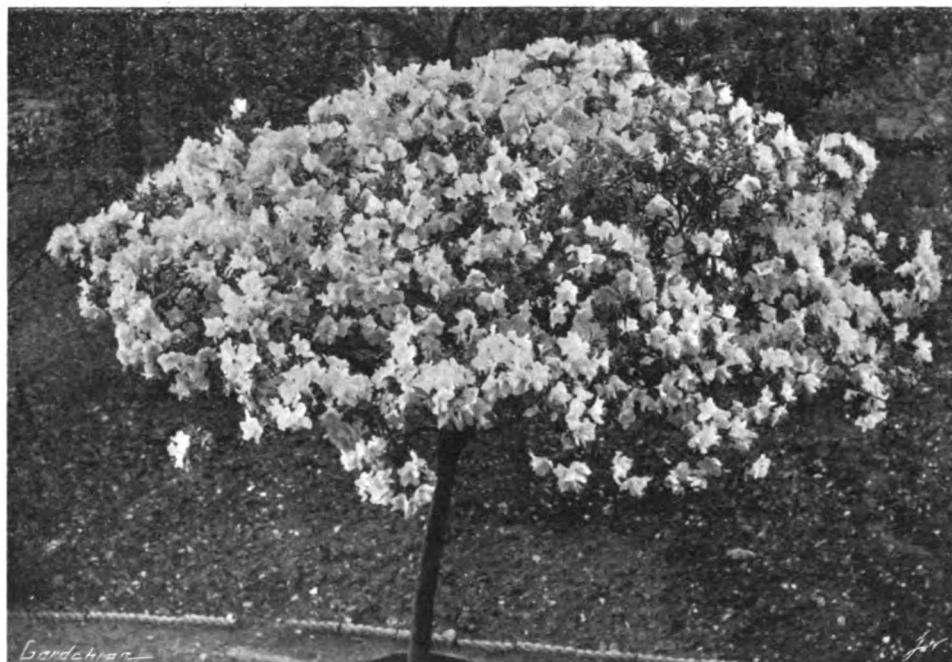


FIG. 133. A STANDARD SPECIMEN OF AZALEA FIELDER'S WHITE.

cultivated Heaths extensively but have never seen them in finer condition. An imposing bed of the White Heather was a rare picture during August. The head gardener here should be proud of them. *W. A. Cook, Whiteley Village, Walton-on-Thames.*

SHRUBBY SENECIOS.

ALTHOUGH the grey or silvery foliage common to so many of the shrubby *Senecios* suggests that these subjects are suitable for dry soils and warm situations, I have found that most of them are decidedly sensitive to any unusual dryness, and appear rather to enjoy a cool, damp root-run, provided the drainage is efficient.

S. rotundifolia, perhaps the handsomest of all in foliage, the large, heart-shaped leaves being a rich, glossy ivy-green, heavily felted with creamy-white on their undersides, is a case in point. Growing in the nursery where I first saw it, the soil being a stiff, rather damp loam, this shrub had leaves of very striking size and substance, but in these gardens, where the soil is light, the foliage is considerably smaller. The same is true of *S. Munroana*, one of the most distinctive and beautiful species, and as for *S. Huntii*, one or two specimens of this species were so infested with aphids every summer—that I am transferring the result of a check—that I am transferring the plants to a cooler place.

by now, undoubtedly, a very large, spreading specimen and must be one of the largest in the British Isles. *C. Ruse.*

THE ROSE GARDEN.

ROSA BEGGERIANA.

AS Roses with sweetly-scented foliage are by no means numerous, it is desirable to draw attention to a species which has leaves possessing a distinct Sweet Briar fragrance. This is *Rosa Beggeriana* (Fig. 132), a native of central Asia, introduced about 1881. It is of shrubby habit and under genial conditions may grow so tall as ten feet, although six feet or seven feet is about its average height. Light coloured, hooked spines, rather less than half-an-inch long, clothe the stems, and are produced in pairs at the base of each leaf stalk. Each leaf consists of five to nine leaflets, smooth or slightly downy on the undersurface. The white flowers may be so much as an inch-and-a-half across, and are followed by red fruits which subsequently assume a purplish hue. It is unfortunate that a species possessing such attractions as fragrant foliage and bright fruits should produce clusters of white flowers which, alas! are unpleasantly scented.

EUPHORBIA OBESA.

Is that a plant or is it a ball? This may possibly be the question that some may ask themselves upon first seeing Fig. 131 (p. 323), which represents one of the most remarkable of Nature's vegetable products. There is probably no other plant in existence that more nearly resembles a ball at a short distance than this one. Very few would recognise this strange plant as having any connection with the herbaceous species of *Euphorbia* that are so familiar to gardeners and others, but it is connected with them by a long series of succulent, woody and herbaceous forms that somewhat graduate into one another, but there are only five or six known species belonging to the same group as *E. obesa*, of which *E. meloformis* is the most nearly allied species.

E. obesa, Hook, f., is a native of the eastern Karoo region of South Africa, and was first discovered and sent by Professor MacOwan, in 1897, to Kew, where it flowered in July, 1899, and was figured in the *Botanical Magazine* (t. 7, 888), but shortly after the drawing was made and before it was published the plant was disgracefully stolen! Fig. 131 is from a photograph of a plant collected and exhibited at Wembley Imperial Exhibition, and at the recent exhibition at Holland Park Hall, by Mr. Frank Frith, Horticulturist to the South African Railways.

The plant forms a globose or ellipsoid body, two to three-and-a-half inches in diameter, with eight slightly prominent ribs, which are faintly crenulate along their crests due to the closely placed sunken scars of the fallen peduncles. The surface is peculiarly harsh to the touch, glabrous, greyish-green or pale brown, marked with numerous transverse, dull, purple-brown lines, which are sometimes all separate and sometimes grouped into bands as shown in the illustration. Extending very obliquely downwards from the crest of the ribs on each side are many slight furrows, which indicate the manner of growth of the plant. I think it probable that each furrow represents one season's growth. The flowers are very small and insignificant, one-and-a-half to two lines in diameter, green, subsessile or on pedicels about one line long, at the centre of the top of the plant.

The very slightly prominent ribs and the harsh surface readily distinguish this from all the other allied species. The whole plant is about five inches high, and the figure in the *Bot. Mag.* shows a specimen with two tiny flowers at the apex, and also flowers in section, considerably enlarged. N. E. Brown.

DAHLIAS AT WEMBLEY.

THE present wave of popularity in favour of Dahlias for garden decoration is due in a large measure to the success which has attended the efforts of raisers to produce free-flowering varieties with flowers of effective colouring, carried on long stems well above the foliage. There is, however, another reason, and it is the demonstration of the value of Dahlias as shown by their use in the decoration of public parks and gardens.

The thousands of visitors to the British Empire Exhibition during the closing weeks have had a capital opportunity of discovering how brilliantly effective Dahlias may be in late autumn. The belts and beds of Coltness Gem in various parts of the exhibition grounds have added to the popularity of this dwarf scarlet-flowered variety. In the North Gardens Dahlias were the leading feature until the frosts of mid-October came to check their gaiety, while along Kingsway—in spite of disadvantages of position—Dahlias made a brave show. Our Annie, at Wembley as elsewhere, has won good opinions from all by virtue of its dwarf habit and abundance of glowing pink flowers. Barlow's Bedder, crimson-scarlet, has substantiated its claims to be a first-rate bedding Dahlia. Several of the "Star" Dahlias alongside this grand exhibition variety have not been altogether a success, but this may be due to their proximity to high buildings; evidently these graceful varieties need an open and sunny position.

Not all the Dahlias in the large beds in the North Gardens have been equally successful. Dobbie's Bedder was the outstanding variety in this part of the exhibition and is a variety that cannot fail to give satisfaction when double cream-coloured flowers are desired. The plant has an ideal habit and flowers abundantly. Ben Ledi, purplish-mauve, is worthy of consideration by those who like this colour. A bright yellow single of dwarf habit and named Yellow Star (the writer has also seen it named Jones's Yellow) has very much the habit of Coltness Gem, and is well worthy of cultivation where golden-yellow flowers are needed.

Among Colletterette sorts a very brilliant one is Scarlet Queen, with orange-scarlet ray flowers and a yellow collar; Mountaineer, wholly white, is very free but rather cold looking; Hussar, vivid red, is effective by reason of its contrasting white collar, while the scarlet Glencoe is commendable.

In the horticultural section Messrs. Wm. Treseder, Ltd., of Cardiff, provided a fine display of Dahlias on the site they occupied in 1924.

This firm offers a wide range of varieties, and has grown a goodly number in the sections at Wembley. Moreover, the firm issues a capital Dahlia catalogue, in which they give the name, raiser, class, colour-description (necessarily brief), height and price of nearly 300 sorts.

In this collection we noted Fedora, a dwarf, miniature decorative variety, with salmon-shaded and pink flowers borne in great profusion; Carine, of similarly useful habit and class, bearing orange-coloured flowers; Sunset, Paeony-flowered, amber-coloured, about three feet high; Vesuvius, a scarlet Paeony-flowered sort, rather taller than the last-named, and a fine bedding Dahlia; Portia, a crimson-scarlet single, two-and-a-half feet tall, carrying its brilliant flowers over dark foliage; Lemur, 2½ feet, also with dark foliage, and dark centred, crimson-scarlet flowers; and Charmer, another miniature Paeony-flowered sort, 3½ feet, reddish-orange with salmon shading. All these are capital dwarf bedding sorts.

A few others which arrested attention during a brief inspection included Bishop Crossley, a crimson-scarlet single, 2½ feet; Denny's, 3½ feet, orange-scarlet, of small decorative type; Maria Houtman, decorative, 4 feet, with fine bronzy-yellow flowers on long stems; Roem van Aalsmeer, one of the finest and freest of white decorative Dahlias, and one that is popular in Holland; Mrs. T. Hay, a fine broad-rayed Paeony variety of clear, soft yellow colour, 4 feet, but which in the writer's garden has grown 6½ feet, and produced greatly admired but invariably single flowers of immense size; and Crimson Glow, a first-rate miniature Paeony sort, with glowing crimson, upstanding flowers.

With very rare exceptions Messrs. Treseder's catalogued heights of varieties are dependable as compared with the plants in their collection at Wembley, and others seen elsewhere. It is disconcerting, to say the least of it, when a variety is purchased because it is 4 feet tall, to find that 6 feet would have been a truer description.

THE MAKING OF A DRY GARDEN.*

WHAT is a dry garden? It requires but little imagination to picture a dry garden after the glorious summer of 1925. But my Dry Garden consists of two volumes, fifteen inches by eleven-and-a-half inches each in which flowers, having been pressed and dried, are mounted. One book contains flowers which open between January and June, and the other book, those flowering from July to December, and it is astonishing to find the large number of flowers in one's garden if specimens are kept as they flower during the year. At any time in the year you may walk through your gardens and see numbers of flowers—but in a week or two's time all those have gone and others are out, and these fade and give way to more, and so on throughout the year. If specimens of every flower which blooms are taken, pressed and dried, and mounted in a book and the name put to each—both the common name and the botanical—it forms a book of infinite value to the collector, and will give his friends the greatest pleasure to examine.

My house was built in 1623, and we presume the garden, too, is over 300 years old, and the number of different kinds of flowers which I have gathered and pressed in one year is over 400. Of course, many of these have different varieties—such as the Rose, the Hollyhock, the Lily, the Antirrhinum, the Primula and Primrose, Rock Roses and other rock plants—but the books include only one specimen for each species. For many years I have been taking photographs in natural colours of flowers of the garden for use in the optical lantern, plates on which every colour and tint of the rainbow is faithfully reproduced. But, unfortunately, these can only be viewed by trans-

* A Lecture broadcasted from Birmingham by Mr. Arthur J. Leeson, The Ivy House, Shenstone, near Birmingham.

NEW HYBRID ORCHIDS.

(Continued from September 19, p. 226.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Betty	B.-C. Thorntonii × C. Dowiana	R. Paterson, Esq.
Brasso-Laelio-Cattleya Electron	C. Hardyana × B.-L.-C. Amber	Baron Schröder.
Brasso-Laelio-Cattleya Golden Glory	B.-C. Mrs. J. Leemann × L.-C. Orion	C. J. Lucas, Esq.
Brasso-Laelio-Cattleya Irma	B.-L.-C. The Baroness × L.-C. Golden Queen	Baron Schröder.
Brasso-Laelio-Cattleya Salta	C. Suzanne Hye × B.-L.-C. The Baroness	Baron Schröder.
Cattleya Croesus	Cooksonii alba × Dowiana	Sanders.
Cattleya Mrs. G. E. Baldwin	Harold × Dowiana	G. E. Baldwin, U.S.A.
Cattleya Surprise	Prince John × Comet	Sanders.
Cattleya Xanthus	Hardyana × Illustis	Baron Schröder.
Cypripedium Uno	Charles Sladden × niveum	C. Cookson, Esq.
Laelio-Cattleya Anlange	L.-C. Aumannia × L.-C. Soulangue	Sanders.
Laelio-Cattleya Cleops	C. Fabia × L.-C. Colmaniana	Sanders.
Laelio-Cattleya Empire	C. Fabia × L.-C. Britannia	Sanders.
Laelio-Cattleya Favourite	C. Fabia × L.-C. Hon. Mrs. Astor	Sanders.
Laelio-Cattleya Luminant	Lucille × Luminosa	Sanders.
Laelio-Cattleya Royal Standard	L.-C. Purple Emperor × C. Hardyana His Majesty	Stuart Low.
Laelio-Cattleya Senator	L.-C. H. T. Pitt × C. Tityus	Black and Flory.
Miltozia Nellie Smith	St. Andre × Hyeana	R. Paterson, Esq.
Odontioda Lyria	Oda, Thwaitesii × Odm. Majesticum	Sanders.
Odontoglossum Ardenticity	ardentissimum × Felicity	A. Hammer, Esq.
Odontoglossum Ardenthworth	Aireworth × ardentissimum	McBean.
Odontoglossum Daulis	Jasper × Lady Veitch	Charlesworth.
Odontoglossum Edie	Mirum × His Majesty	Charlesworth.
Odontoglossum Enchantress	Anzæ × Colossus	E. R. Ashton, Esq.
Odontoglossum Georgina	Georgius Rex × Rosina	McBean.
Odontoglossum Hesione	The Czar × Tityus	Charlesworth.
Odontoglossum Homily	Rolfæe × Alexandrina	McBean.
Odontoglossum Moira	Vardar × Georgius Rex	Charlesworth.
Odontoglossum Myxodon	Lady Veitch × Rosina	Charlesworth.
Odontoglossum Nola	Penelope × Britannia	Charlesworth.
Odontoglossum Olenus	Faustina × Lady Veitch	Charlesworth.
Sopiro-Cattleya Alta	S.-C. Thwaitesii × C. Maggie Raphael alba	Stuart Low.

mitted light, and it occurred to me to preserve the flower itself; mounted in a book, would be much more interesting to look at than photographs on glass, even if in their natural colours. So I purchased two books for mounting them at a cost of 7/- each, some white blotting paper for drying them in, a bottle of gum, and then started work. The dry garden book is bound so that when flowers are mounted on the different pages their bulk will not break the binding.

The specimens should be plucked when not too fully blown and placed in pads of white blotting paper, and then large books or heavy weights placed upon them. A good plan is to put them in the linen press instead. They should be changed occasionally into fresh, dry blotting paper, particularly in the winter, when some flowers, which are thick and heavy, may take a month or more to dry. In this case it is a good plan to dry the fresh blotting paper before the fire and transfer the drying

drying produces rusty colour, particularly with the white flowers, such as White Lilac.

When the flowers are quite dry they are mounted as follows:—After arranging them in the book as you wish—and this is a process that brings out the artistic feelings of the mounter—they are placed with the front on a sheet of blotting paper and liquid gum spread lightly over the back of them. I use a bottle of gum with a wheel at the neck, and by drawing this over the flower just sufficient gum is spread over it. The flower is then taken hold of by the stem and carefully placed on the desired page of the book and pressed down. When mounting is finished for the evening, the whole is put under pressure, and later on the names are added to each. If desired, instead of gumming the flowers on the paper, slips of transparent gummed paper, such as is used for repairing torn music sheets, may be used, but with many flowers this is scarcely practicable.

It is well to mount several similar flowers

Beech, the Wistaria, Laburnum, and Acacia may be so arranged that they appear to be hanging from the tree. With very heavy flowers, such as the Paeony, it is best to thin the petals before drying and pressing—this can be done without damaging the beauty of the flower, and it takes a shorter time to dry than if pressed whole, and the colours are more likely to remain.

Much material can be found even in the vegetable garden. Few people would recognise the flower of the Potato, and probably fewer still the flower of the Cauliflower. Interesting specimens may be made of the Kidney Bean with its red flower and its leaves, and, lower down, a Bean-pod showing the flower and fruit; the culinary Pea with its flower and pod and tendrils; Asparagus, with its little bell flowers. And so interest increases as the book grows, and the making of a "dry garden" carries one through not only the summer months, but will occupy one's leisure time in a most profitable way throughout the winter.



FIG. 134.—HYPERICUM URALUM IN THE R.H.S. GARDENS, WISLEY (see p. 331).

flowers to it. This process will have to be repeated probably many times, whereas in the summer small flowers may be dried and pressed in a few days.

There is a good device lately come out which dries and presses the flowers in from six hours to three days. They are put between pads of cotton wool, and under and over are covers of half-inch wire netting. These are secured and pressed by straps and then the whole is hung before the fire, or out in the sun, or they may be placed in the airing cupboard next to the hot-water pipe, when in a day or so they are ready for mounting. And I may here add that the quicker the flowers are dried the better they retain their colour, and, generally speaking, with care and quick drying the flowers retain their lovely colours wonderfully. I find this the case too, with the leaves of the Ampelopsis when they have changed to the charming autumn tints, and the Blackberry leaf, the Loganberry, in fact, all the tints of all autumn leaves are beautifully preserved and are as fresh as when gathered. Long

with their leaves and specimens of their buds, in the form of a fan. For instance, a Snowdrop by itself would look very simple, but a well-arranged mass of single and double Snowdrops, with leaves and buds, makes a beautiful picture. Also, where the same class of flower has different colours, such as the yellow and violet Crocuses, the pink and white Honesty, with the transparent "moons," the Wallflower, etc., make charming subjects. Most effective pictures are made with *Pyrus japonica*, and with this, as with many other flowers, it is as well to press some extra flowers singly and apart from the stems, and they can then be added to those mounted and thus enhance the picturesque effect.

A very pretty setting is obtained by mounting the Strawberry flower with its leaves, also the Ranunculus, Delphinium, Rose, Poppy, Spanish Iris, Montbretia, Helleborus, Cyclamen, as well as the Primula family, Wallflower, Bluebell, Ceanothus and the Apple and other fruit blossoms.

Even a branch of the new-leaved Copper

It is possible to fill other books with flowers of the fields and hedgerows, with different kind of grasses, mosses, etc., and with an illustrated gardening book or volume of *Flowers of the Field*, this will provide something worth working for.

I will close with the following lines of "Appreciation" which I received from an Edgbaston lady, who signed herself "A Plant Lover."

These flowers of thine so cunningly compiled,
Bring back mid wintry chills and sullen skies
Glad thoughts of sunshine past
When florets ope'd with blushing shy surprise,
Nor dreamed dark days would come
When Zephyrs mild would change to bitter
When flower-love dies [blast,
And birds fly sadly south.
But here beguiled
The sun has left perpetual summer where
he smiled."

If I have been the means of inspiring others to take up the "Dry Garden" as a hobby I shall feel amply repaid in giving my experience.

EDITORIAL NOTICES.

ADVERTISEMENTS should be sent to the PUBLISHER, 5, Tavistock Street, Covent Garden, W.C. 2.

Editors and Publisher.—Our correspondents would oblige by delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XIX.—A TRIP INTO PEMAKO.

BY dusk, after the night of gale and blizzard, I had collected seeds of two 'Neriiflorums,' and then crossing over to a long grass slope, I added the 'Daffodil' Primula to my bag. The capsule is quite globular, resembling in that respect 'Golden'

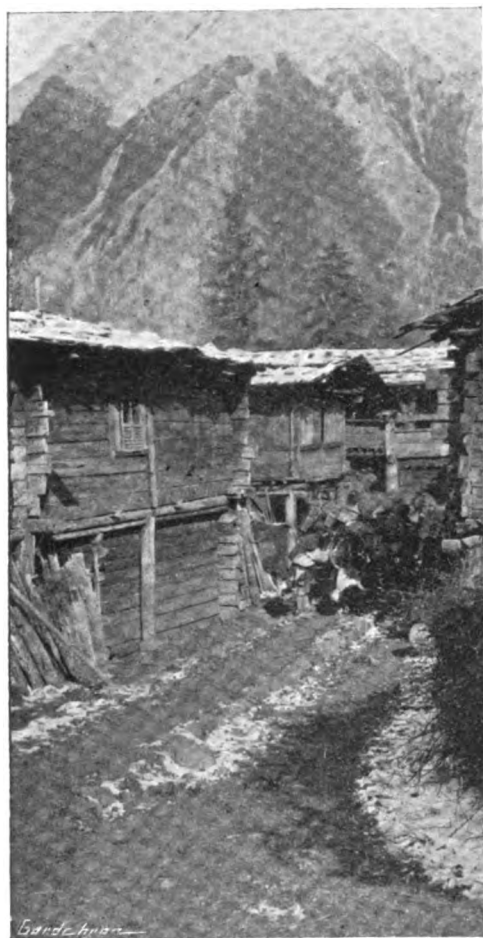


FIG. 135.—A TIBETAN VILLAGE.

Primula, but though the slightly irregular flower, carried vertically on the stem, recalls that of an 'Omphalogramma,' the seeds are neither flattened nor winged. Still, I regard the 'Daffodil' Primula as a step towards an 'Omphalogramma,' of which we found no true example. A week later, on the other side of the pass, I found many tufts of the 'Daffodil' Primula (as also of the 'Golden' Primula) in full bloom again, at the edge of the snow, as though it were spring! They differed in no respect save one, from those found at the end of June—they were quite

*The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 23, July 4, July 18, August 1, August 15, September 5, September 19, and October 10, 1925.

scentless. It is altogether a queer plant, with its narrow, strap-shaped leaves, and one or two flowers set on edge.

On the 19th the weather improved and I took a working party of Tibetans up the valley. We spent the day excavating Rhododendrons, and did pretty well. We got seeds of all three 'Neriiflorums,' and more by good luck than by good management uncovered the only patch of 'Plum Glaucum' known to me. It is a beautiful plant, a sort of cross between 'Plum Warner' (a 'Campylogynum' of the usual type) and 'Pink Glaucum'; the flowers recall the former, the leaves the latter species. Cawder, meanwhile, reconnoitred the pass itself, and returned with a few seeds of the 'Amethystina' Primula, 'Cherry bell.' On the 20th we continued the hunt for buried treasure, and finding a more sheltered glen made a good bag of the lovely 'Carmelita'—the carmine 'Neriiflorum.' Next day we broke camp again and started for the pass, intending to go down into Pemako. It was a hard trudge through the snow for the heavily laden porters, but if the north face was bad, the south face was awful. However, eventually we got down to the swamp where we had turned back that famous June day so long ago, and pitched camp after dark. On the way down I collected some Primula seeds, and found the purple-flowered *Lonicera* bulging with glaucous berries like small Victoria Plums. But of 'Orange Bill' (the Prince of Orange Rhododendron) I saw no trace in the deep snow.

It poured all night and all next day, a thick snowstorm raging above. There's a situation for you! I thought, in the words of Mr. Puff.

However, into the snow I plunged after 'Orange Bill,' which is a shy bird, clinging to the steepest slopes and buried in the densest scrub, and found that it was easily picked out by reason of its brilliant, glaucous foliage; indeed, it is as magnificent in winter plumage as it is in flower. But the bushes proved easier to spot than to reach, and I was nearly frozen stiff before I pouched a few capsules. The bad weather continued, and the snow grew deeper and deeper. On the 22nd I attacked the sheltered side of the valley, but found the conditions here almost arctic. There was very little vegetation, except numerous species of scrub and dwarf Willow, so I returned to the south-facing cliffs, which were covered with a jungle of Rhododendrons; these had been of various species in flower, but they all looked precisely the same in fruit. Luckily, I had marked one or two, with metal tickets, and these I soon found. The dwarf pink Rhododendron (K.W. 5876), gave a lot of trouble, and I was almost in despair as there was only one patch of it; however, I saved a few capsules. Curiously enough, I found hassocks of this little gem in full bloom at the edge of the snow, with the two Primulas already referred to, and a number of other flowers—the 'Trichocladum' Rhododendron (K.W. 5851), *Ranunculus*, *Cassiope*, *Saxifraga*, *Pedicularis*, etc.

We had intended to leave our camp standing, and with a few porters push on into the forests of Pemako, travelling lightly. But so bad was the weather, we did not much fancy sleeping out in the open. Moreover, we had been compelled to stay in this camp three whole days, collecting seeds under the most adverse conditions, and we now learnt that the porters were coming to the end of their food; though that difficulty was not insuperable, as we could have sent them back to Pe for more. But there was another and more formidable danger. We were within measurable distance of the final closing of the pass till next July, and had no desire to be shut in on the wrong side of it. We therefore chose the better part of valour and decided to go down into Pemako so far as we could in the course of a day's march, returning to camp the same evening, and to break camp and recross the Doshong La on the following day.

October 24 was fairly fine, and I left camp at ten o'clock determined to turn back at two. Descending steeply through thickets of the big-leaved 'Fulvum' Rhododendron, dwarf Cherry, gaudy-leaved *Viburnum*, *Salix*, Birch,

Rowan and other shrubs, I soon came upon new species of Rhododendron, with sticky, glandular bristles covering capsule, pedicel calyx and petiole; I had found a similar looking plant on the Gumpa La in 1922—it has the look of *R. strigilum* about it. Then came bogs, with strips of Conifer forest, Larch and Abies, and an undergrowth of Rhododendrons; and after that a dense growth of Bamboo. Amongst the Rhododendrons were several I had not seen before, including a stout, bushy 'Grande,' and which from its foliage I took to be a 'Heliolepis.' It had a very small capsule and exhibited one feature [unique in my experience of the genus; many of the trusses were borne directly on the old wood. After that we got down into the rain forest, where quite fifty per cent of the tree growth was composed of a big-leaved 'Grande' Rhododendron, forty to fifty feet high. The leaves of this species were two feet long and eight inches wide; but though we saw scores of trees, I did not see a single fruit, and it was not till we reached the other side of the Himalaya, through the gorge of the Tsangpo, that I collected seeds of it.

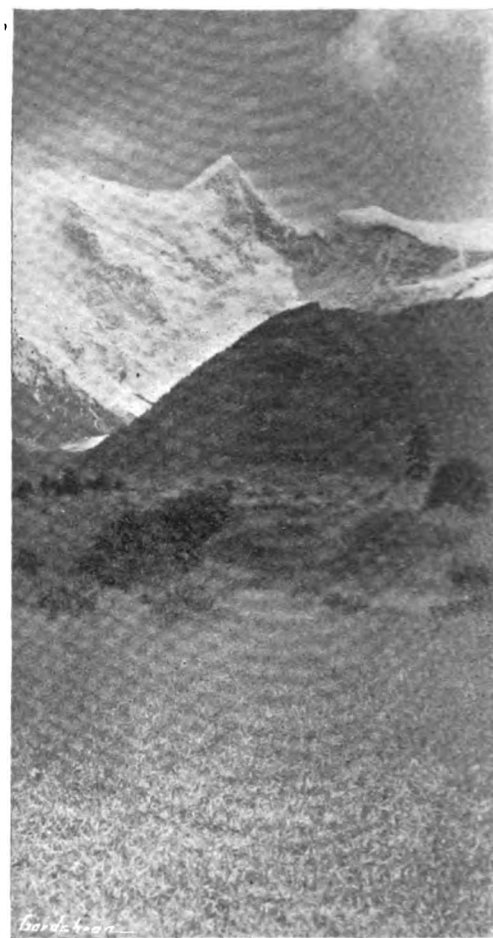


FIG. 136.—NAMCHA BARWA, 25,000 FT. HIGH.

Amongst the undergrowth here were species of *Arisaema*, *Podophyllum*, etc., and elsewhere we met with thickets of *Enkianthus*, *Rubus*, various species of *Vaccinium* with more or less edible (albeit tart) fruit, and Rhododendron, including the pink 'Thomsonii' and 'Coals-of-Fire'; the pedicels of this last are curiously curved, as are the capsules themselves, otherwise one would wager long odds it is a 'Thomsonii' of sorts—though again the circle of black glands is a foreign feature.

So I went on through the forest, down, down, till I was certainly not more than 8,000 feet above sea level, perhaps no more than 7,000 feet. It was long past the hour for returning. Hateful thought! The forest was far too interesting, and I simply could not leave it. Besides, I had found two extraordinary little

epiphytic *Rhododendrons* (one of which recalled *R. pendulum* of Sikkim), and seeds of them I must have. That job took nearly an hour, and it was four o'clock when I started back for camp. Consequently, I was still some distance away when darkness came on, and the heavy clouds and drizzling rain which set in completed the gloom. The last two or three miles proved rather difficult under the circumstances, but I got back to camp before seven, and enjoyed a good dinner.

On October 25 we broke camp in a heavy snowstorm, and crossed the pass once more. The soft snow was now piling up, and we sank in waist deep time after time; consequently, it was a weary band who reached the upper marsh in the late afternoon. A few days later the pass was finally closed to traffic for eight months.

All the smaller alpine, such as 'Cherry

Tibetans—might make a hash of it. I guessed rightly, for I never saw either of them again. One fell sick, the other cleared out—apparently he was "wanted."

Happily, we got everything we required south of the river, though we did not get the quantity of some species I might have secured through these men. Two of my collectors faced the rigours of the Doshong La once more, to collect another packet of 'Orange Bill,' and they did very well.

On October 28, we reached Pe on the Tsangpo, and I at once set to work drying and packing seeds. The weather was now brilliantly fine and all the snow peaks were clearly visible. Before leaving Pe, I sent a man across the river to collect the big blue *Gentian* and the rose-purple *Rhododendron*, this last a species in the first dozen, out of the seventy or eighty species discovered. *F. Kingdon Ward.*

Amelanchier canadensis which are very attractive, but for a short period only. It is noticeable that the specimen which is in a sheltered position retains its foliage much longer than does its exposed companion. Not far from the rock garden is a plant of *Berberis chitria* which has almost grown into a tree and the age of which must be about forty years. The leaves are reddening and it is bearing quantities of red berries which will subsequently darken, while in the same part of the gardens the large-leaved *Hydrangea quercifolia*, which some people seem to find difficult to grow, and *Prunus pumila*, are noteworthy for their autumn beauty. Other shrubs with exceptionally bright, coloured foliage are *Viburnum dentatum* and *Rhus Cotinus* var. *purpureus*.

Many of the *Rose* species growing near the river have fruited well this year. The most prolific of which has been *Rosa multibracteata*.



FIG. 137.—*NYMPHAEA STELLATA* IN A WARM WATER-POOL AT WISLEY.

Bell' and the three-coloured *Primula* were now finally and hopelessly buried under three feet of snow, but we stayed another day at the upper flat to collect *Rhododendron* seeds—the scrub 'Lactum' 'Yellow Peril' and various 'Anthopogons.' On this, our last day at the Doshong La proper, I was lucky enough to collect on some bare rocks at 13,000 feet, quite a good little packet of 'Scarlet Runner' seeds, which I valued more than any other species with the possible exception of 'Orange Bill'; and on the way down the mountain, just before the light failed, I dug out of the deep snow some more 'Plum Glaucum.'

We could have gone down to Pe in a few hours from this camp, but there was so much to collect on the way that I decided to camp at the lower flat en route. This gave me a chance to collect seeds of half-a-dozen *Rhododendrons* which are common to both banks of the Tsangpo, as I had a suspicion that the men I had left at Tumbatse to collect—local

NOTES FROM WISLEY.

In addition to the many shrubs at Wisley which at this time of year are conspicuous because of their brilliant leaves, there are numbers of fully grown trees to be seen about the gardens with striking foliage. Foremost among them is *Liquidambar styraciflua* which in the autumn of every year towers like a beacon over the wild garden. Here also a specimen of *Cornus florida* has coloured exceptionally well this year. The undersurface of the leaves is glaucous which gives an attractive effect. Another tree with red foliage in the autumn is the Scarlet Oak (*Quercus coccinea*) of which the Knaphill variety is to be seen in the field garden.

Of the yellow-foliaged subjects *Liriodendron tulipifera* is one of the brightest and the leaves remain on the tree for quite a long time. On the rock garden are two trees of

This bears a profusion of scarlet clusters of small, hairy, Pear-shaped hips, which exude a strong perfume of Sweet Briar. No less ornamental are the fruits of *Rosa pomifera* and *R. gymnocarpa*. There is still a fine show of bloom in the new *Rose* borders which have recently been made on the new land near Wisley village.

A particularly graceful new shrub with delicate, Fern-like foliage is now in flower, namely, *Hypericum uralum* (Fig. 134), the flowering of which has been hitherto prevented by the frosts. This year, however, quite a number of the frail, yellow blooms have opened. In addition the well-known Holly-leaved, evergreen *Osmanthus ilicifolius* is now blooming fragrantly, and for no apparent reason a plant of *Kalmia angustifolia* is in full bloom in the wild garden.

The perennial *Asters* on trial at Wisley are now at their best, and among them are some very good ones, such as Barr's Pink, of the

Novae-Angliae section, and a fine white named Queen Elizabeth. In the amellia group, *Frikartii* stands out. The flowers are pale blue in colour, and it is rather taller than most varieties of this section. Another noteworthy variety is *Friquet* with pale pink flowers. One of the plants of those sent in for trial is paler than the others, and many of the flowers are almost white.

In the frames near the alpine house the *Crocus* species have started to bloom again. One of the most beautiful is a white-flowered species, *C. caspius*. The flower is of good substance, and the leaves come up with it. This is not so in the case of *C. cancellatus albus* which is flower-

of October. At that time it is quite a distinctive tree. The other is the well-known American Red Oak, *Quercus rubra*, whose brilliant red leaves are a conspicuous feature of the autumn garden.

Some of the numerous varieties of *Acer palmatum* produce foliage of the most brilliant hues, but for sheer brilliance of leaf-colouring the palm should be given to *Rhus typhina*, and its beautiful variety *laciniata*. To see either of these plants at the height of their splendour in autumn is to witness a sight that will never be forgotten. The *Cotoneasters* contribute largely to the display of autumn tints

sequently to a shining black, and, backed by the somewhat coarse, but nevertheless handsome foliage they render the plant extremely ornamental. Then we have the scarlet fruits of the *Skimmias*, of which *S. Fortunei*, in the rock garden is the best. In this matter of ornamental fruits, *Pyrus Aucuparia* occupies a place of honour on account of the earliness at which its scarlet fruits become evident, while it has a variety, *P. A. fructu-luteo*, with very fine yellow fruits.

We are again beholden to the genus *Cotoneaster* to supply us with autumn fruits. Many, such as *Cotoneaster Simonii*, *C. thymifolia*, *C. congesta* and *C. microphylla* are already well-known species upon which the planter may rely for the production of their scarlet fruits. Among the newer sorts we have *C. horizontalis* and its variety *perpusilla*, both being shrubs of distinctive habit, and bearing a quantity of scarlet fruits which are well shown off by the glossy, dark green leaves. Scarlet is also the distinguishing character of the fruits of *C. Franchetii*, a very graceful and compact growing shrub. *C. glaucophylla vestita* carries dull red fruits, and is also of graceful habit, while *C. Harroviana*, from Yunnan, promises to produce a goodly display of its clusters of small fruits.

Among the more curious fruiting shrubs may be accounted *Leycesteria formosa*. Its dark fruits are hidden by the large red bracts, but it is well worthy of a place in any collection of hardy shrubs.

The genus *Berberis* supplies us with some of the most charming fruiting shrubs that we possess, and to the many fine species there have been added in recent years numbers of excellent hybrids.

There are some few trees and shrubs which are treasured because they are valuable for the richness of their leaf colours in autumn, and also for the ornamental character of their fruits. The first of these to be mentioned is a very common shrub in cultivation. It is *Berberis Aquifolium*, one of the most handsome shrubs we possess. To its rich autumnal colouring of foliage is to be added the beauty of its clusters of Plum-coloured fruit, with their fine covering of bloom. The scarlet leaves of the compact growing *B. Thunbergii* are a feature of the garden in autumn, and the plant further recom-

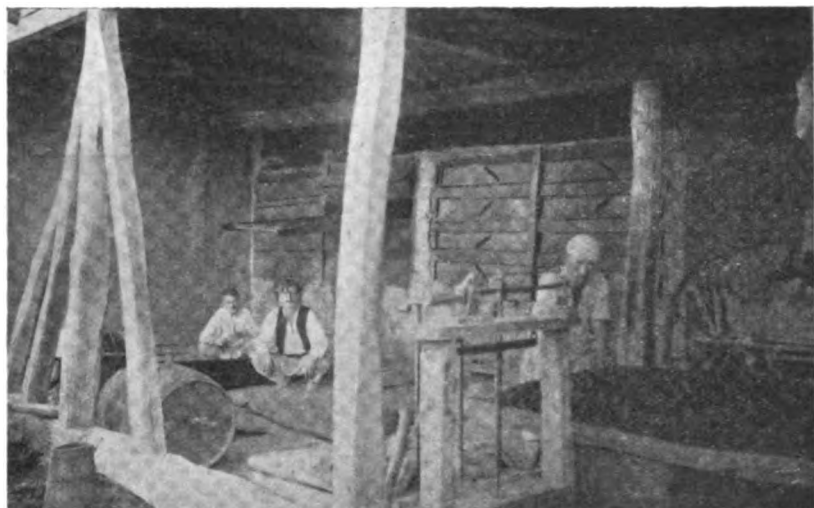


FIG. 138.—OVEN IN WHICH PRUNES ARE DRIED.
(see p. 333)

ing, as also are *C. sativus Pallasii*, with narrow segments, and the very pale, lavender-flowered *Crocus Tournefortii*. In the open ground, *C. hadriaticus* and several beautiful varieties of *C. speciosus*, such as *Myddleton Gem* and the elegant *C. s. Aitchisonii* are flowering. *C. zonatus*, with its belt of orange, is also in bloom.

Nymphaea stellata (Fig. 137), whose starry, blue flowers rise well above the water, is still flowering freely in the heated tank in front of the laboratory, while against the wall of the building many bright *Tigridia* blooms are still to be seen. *J. E. G. White*.

NOTES FROM EDINBURGH.

AUTUMN, "that season of mists and mellow fruitfulness," is a welcome time to those whose affection centres round trees and shrubs, for then many of their favourites are seen in a new and gorgeous dress. The wealth of autumn tints among trees and shrubs varies from year to year, and the past two years have not been remarkable in Edinburgh for the autumn display. This year, however, we are more fortunate, and visitors to the Royal Botanic Garden, Edinburgh, are able to see a variety of trees and shrubs of recent introduction in all the beauty of their autumn foliage.

The study of autumn tints is indeed one of the most fascinating phases of gardening, and for the benefit of others who may be interested in the subject such trees and shrubs as have proved themselves notable for the beauty of their autumn foliage are here recorded.

The first to be noted is *Aesculus flava*, a North American tree, the brilliant yellow of its foliage making itself evident in early September. This tree is at that period seen to even greater advantage when placed against a dark background. It is one of the first trees in the garden to become entirely deciduous. Two other trees follow upon it in the production of coloured foliage. One is the Japanese *Quercus dentata*, whose leaves assume a warm brown tint towards the end of September and the beginning

in the garden, especially noteworthy being the red leaves of the Siberian *C. laxiflora*, and of *C. foveolata*, and copper-coloured tints which distinguish *C. acutifolia* var. *pekinensis*.

Euonymus atropurpureus, a native of North-Eastern America, produces leaves of a fine red colour, while the orange-yellow of *Pyrus*



FIG. 139.—THE TRANSIT OF DRIED PRUNES TO MARKET.
(see p. 333).

alpina super-aria, and the orange-red tints of the North American *Crataegus flammea* are worthy of more than passing notice.

Yet another interesting feature of trees and shrubs in autumn is the brilliantly-coloured fruits, and many new species of berry-bearing plants which have been introduced in recent years. During September and October the scarlet hips of species of *Rosa*, e.g., *R. Moyesii*, *R. rugosa* and others, make a very pleasing display. One of the most remarkable of fruiting shrubs is *Viburnum rhytidophyllum*. Its large clusters of berries are at first red, turning sub-

mends itself by the production of fine red fruits. Although not making such a display as *B. Thunbergii*, the blue-coloured fruits of *B. Darwinii* are yet a further character for which this handsome species is treasured in gardens.

One of the most handsome trees in autumn is *Pyrus Aria robusta*. It is a well-proportioned tree with silvery-grey foliage against which the clusters of red fruits show to advantage. This is a plant which is deserving of wider cultivation, more especially in public parks and gardens, where so few plants are grown with a view to autumn effect. *Robert H. Jeffers*.

BOSNIAN PRUNES.

(Concluded from page 314.)

CULTIVATION AND MARKETING.

The marketing of their produce is the greatest problem that confronts the farmers and dealers of Jugo Slavia and is the most difficult and perplexing subject in trade development. The whole commercial world is involved in this vital question, and great efforts are made to improve the different organisations. Plum cultivation is mostly in the hands of the peasants and it is interesting to watch their skill and capability in handling the fruit. So soon as the fruit



FIG. 140.—AN OFFICIAL STATION WHERE PRUNES ARE WEIGHED. .

is ripe the peasants dry it in their own drying ovens. Every large farm has its own oven so as to be able to dry the fruit promptly, as Plums are at their best for only a comparatively short time. The time to pick Plums is largely a matter of judgment, and in this respect it is necessary to be familiar with the fruits. The picking is done, as a rule, on successive days, commencing by picking fruits of the right size and best colour, then repeating the process on the following day or a few days later. Poor and over-ripe fruits are generally put into large casks and used for the preparation of brandy (sljivovic). To prepare one pound of preserved Prunes, from three to four pounds of fresh fruits are required. Fresh fruits are sold in comparatively small quantities, the bulk being used for drying as Prunes, for brandy or for jam. Besides, the great distances between the various farms, some of them forty to sixty miles from the nearest market place, and the very bad roads of the country, make the selling of fresh fruit quite impossible for many of them. Fig. 138 gives an idea of a drying oven at one of the large farms in Bosnia.

Drying takes place in August and September and as a rule, September 15 is the first market day. Fig. 139 shows the conveyance of bags of dried fruit from the country to the market. Sometimes there are hundreds of such carts on the market place. These processions of carts from various parts of the country continue during the whole of the autumn and in a small degree also during winter time. Each peasant brings his bags of Prunes on one or two carts, and it is interesting to see how cunningly he places his goods on the market. If prices are low and he is not in great need of money he brings only a few bags and carefully watches the prices which obtain. If there is a great demand the prices at once rise; if there is no demand he is soon demoralised, yet the majority are quite good business men.

On reaching the market place the peasants have to pass the official weighing house, a Government institution for controlling the quantity and quality of the fruit. The illustration in Fig. 140 shows one of these official weighing

houses. Here are seen the different types of Jugo Slavic peasants—Bosnian, Servian, Mussulman. After the weighing the owners receive an official statement of the weight of their fruit. With this document they go to the market, where they deal according to the stated weight.

The entrance to the market place is usually indicated by a small flag placed on the side of the road; this shows the purchaser the place set aside for transacting business. Fig. 141 shows one of the markets. The bargain is sealed by a shake of the hands, but, to be valid, the shake must consist of an upward movement and the hands must separate in the upraised position. In Fig. 142 can be seen the completion of a bargain; the arms of both men are raised with their hands just parted. This method

of the fruit are justified by long experience, and their services are duly recognised.

When the fruits are purchased at the market they are taken to the merchant's stores, where they undergo sorting and grading and are finally repacked in bags for delivery to the étuvage, or for exportation to the packing houses abroad. Fig. 143 shows one of these merchant stores at Brčko, after the closing of the market. So soon as the fruits have been bought they are put into store and graded. The grading is according to certain rules. In the past there was no definite conception of what the standard grading should be, and only within recent years has a standard grading been established. Grading is a comparatively simple process, but it requires much attention. The Prunes are put into a holder; the man in charge turns a wheel thus moving the sieve that composes the whole of the upper part of the machine. During the forward and backward movement of the wheel the Prunes that slide along the sieve are compelled, if large enough, to reach the lower end, where they are collected in baskets or bags. The smaller ones pass through the sieve and are gathered at the opposite end of the machine. Another man is employed to guide the Prunes down the sieve and separate any fruits that may have stuck together. A third man is at the end of the machine where the Prunes that do not pass through are collected; he weighs the Prunes from time to time in order to ascertain the number of the grading. Should there be too many going to a $\frac{1}{2}$ -kg., he slows down the movement of the sieve and, on the other hand, quickens it if below the required number. The grading begins with the large-sized Prunes and by means of a large sieve. In autumn this works goes on day and night in all large stores.

STANDARD GRADING.

There are, as a rule, three kinds of standard grading. The Great Garniture, the small Garniture and the Mercantile. The Great Garniture comprises:—70-75 to the $\frac{1}{2}$ -kg., equal to 63-68 to the English pound; 80-85 to the $\frac{1}{2}$ -kg., equal to 72-77 to the English pound; 95-100 to the $\frac{1}{2}$ -kg., equal to 85-91 to the English pound; 110-120 to the $\frac{1}{2}$ -kg., equal to 99-108 (commonly 100-110) to the pound.



FIG. 141.—A PRUNE MARKET.

The bulk of the Prunes at the market place is handled by local buyers or shippers, whose chief occupation is to buy the small lots from the individual farmers, to form car-loads and thus obtain better rates. They possess warehouses in which they store the Prunes until car-load shipments can be made, or until conditions are favourable for shipping. These buyers pay for the Prunes in cash and thereby facilitate the farmer's business. They sort and grade the fruit and make the daily price uniform, thus facilitating the exporter's task. The activities of these merchants in the first handling

The Small Garniture comprises:—80-85, 95-100, 110-120. The 110-120 is called also the Usance. The Mercantile is the smallest grading, unnumbered. Sometimes there are also 120-130 and other grades between the above-mentioned, but they are not so usual in Jugo Slavia. The 60-65 to the $\frac{1}{2}$ -kg. (54-59 to the pound) are in such small quantities that they need not be taken into consideration. These numbers mean that so many fruits go to the $\frac{1}{2}$ -kg. or the pound, and these figures are common to Jugo Slavia and the continent. In Jugo Slavia, as in the trade generally, an excess in the num-

ber of fruit up to two is allowed in the grading. Thus the 70-75 can count up to 77, the 80-85 up to 87, and so on. However, after sterilisation, sometimes on account of a more thorough drying and loss of weight during the long journey, the fruits may further exceed the standard number by one or two. This seems reasonable and is thoroughly understood in the trade, but does not apply to Prunes that are dipped after the drying.

PACKING.

After grading, the Prunes are ready for packing and sterilising and are brought to the étuvage



FIG. 142. THE RAISING OF ARMS ON THE CONCLUSION OF A SALE OF PRUNES.

Here the different gradings are examined as well as the quality and weight. When Prunes, not yet sterilised, are bought to distant places whence they must be forwarded by railway or steamer, the matter is, of course, different, and the risks greater. After the fruit has been taken over at the étuvage, it is packed in cases of different sizes, generally lined with parchment paper. For the Continent, as a rule, the cases weigh 24 kg. (51 pounds, 12 ounces); for England the majority of cases weigh 12½ kg. (27 pounds, 7 ounces), or 11.35 kg. (25 pounds). The facing layer is neatly arranged by hand in equal rows so as to give the packed fruit a better appearance when the case is opened; this work is done by girls. The second operation consists in filling the cases. This work is done with a press. The Prunes are weighed and pressed into the cases in two or three portions for each case according to the size of the latter. Then the cases are closed, nailed, and prepared to be put into the oven for a final sterilisation. When this process is completed the cases are properly readjusted and prepared for export (Fig. 144). Of course, systems vary, but after forty years' experience the above is the method generally adopted in Jugo Slavia, and is the best for retaining the natural bloom and sweetness of the fruit.

STORAGE.

The good keeping of the packed Prunes depends greatly on the storage, which must be dry and cool. Any carelessness in this matter may injure the fruits or shorten their keeping properties. If all instructions are carried out and, provided the fruits are from a sound crop, as in 1923, they are sure to keep in good condition for one and two years or even more. The appearance of a white substance on the fruit after Christmas may be nothing more than a sugary transpiration of the fruit, or a harmless yeast—*Monilia candida*—which is commonly found on dried Figs and other preserved fruits. Moulds (fungi) appear only on unsound and badly dried fruit (also on dipped fruit, after the curing), and, generally, if so infected, Prunes deteriorate in a comparatively short time. *Mario T. dell'Elmo*.

MICHAELMAS DAISIES AT COLWALL.

MAN has outclassed the winds and the insects as a match-maker in the vegetable kingdom and when a gardener has a bias in this direction we may look for excellent results from his pairing. Mr. Ballard has such a bias, and his Michaelmas Daisies are a *jait accompli*: but before long, the garden world will know that these are not the only plants to which he has turned his attention although they are his principal speciality

the now well-known *Amellus* variety King George. The public rather like these cup-shaped flowers—Anita Ballard is one—but, personally, I prefer the flat type. All the same, Royal Blue is a fine Aster. Maid of Athens has been well named. More than one will have left his heart behind with the lovely pink "Maid." A rough description would be Lady Lloyd improved, but in this newer variety the individual flowers are larger and rather a paler pink—more self-coloured—while its pyramidal form of growth leaves little to be desired.

October Dawn flowers after those already mentioned, so there was only an odd bloom or two out, but what a show there was! It has large, pale, heliotrope flowers, many with diameters of from two-and-three-quarters to three inches. It is a dwarf grower for a *Novi-Belgii*, and looks as if it might have *Amellus* blood in it. I was surprised to find how well Grey Lady looked; it is one of those with long, very narrow, ray florets, after the type of Miss Eisle, and of a pretty rosy-grey colour. It is a fair weather variety for anything more woebegone looking than I found it in my garden on my return home it is hard to imagine. I now pass on to the latest—the three novelties recently offered by Mr. Ballard—I saw them all and I consider two of the three take rank among the very best of his productions. Margaret Ballard is a double or semi-double; the doubleness depending partly, as is very usual in Michaelmas Daisies, upon the time at which the flowers are produced, early or late in the flowering season. The colour is difficult to describe and I must leave it as a kind of rosy-red, bright and pleasing, both on the plant and when cut. Freedom is an old friend. It was one of several that Mr. Ballard sent me under numbers in 1922. Practical experience singled it out as the best of the bunch. The large, single blooms of pale heliotrope with the tips of the ray florets slightly curving inwards, and its clean-cut centre, mark it as a variety of distinction and of special charm for all those who think more highly of single than of double flowers. It is very free and has a loose, graceful habit of growth.

The fame of Colwall was fairly laid by such varieties as Beauty of Colwall, Lady Lloyd, Edith Goodwin and Ethel Ballard. They are still hard to beat. Later additions of great



FIG. 143.—ONE OF THE MERCHANT STORES AT BRČKO

merit include the following:—Lavender, a lovely, single, rich lavender which was nearly over at the time of my visit; Queen Elizabeth, a capital pure white with a good many rows of quilled florets round a yellow centre—I prefer it to Maid of Colwall or Snowdrift; Queen of Colwall, probably the tallest grower and the largest-flowered of all the Asters I saw; the flowers are semi-double, of a pretty pale mauve shade; Royal Blue, a handsome plant with cup-shaped flowers of the identical colour of

Powder Puff is not a patch on the other two. It has quaint, little, stubby, double flowers which are officially described as "powdered rosy-mauve" in colour. To me, the powdered look is a fly in the ointment. I would label it "For those who like curiosities."

White Pigmy is my own name for a row of a white variety whose maximum height must be about eighteen inches. I think I may say its dwarfness endows it with potentiality. It may be the harbinger of a race comparable

to the "Cupids" among Sweet Peas, and to the "Gems" among Dahlias, and it would seem probable that it has every chance of sharing the utilitarian popularity of the last named. Little Boy Blue and Little Pink Lady are usually classed as dwarfs, and so they are when compared with such varieties as Queen of Colwall or Beckett's King of the Belgians, but compared with White Pigmy they are only semi-dwarfs. Nevertheless, they are very attractive in their deep blue and pink colouring, while the Kochia-like habit of the plant provides a variety of form and height which is all to the good.

I do not think Mr. Ballard gives his Little Boy Blues the proverbial liquor that is said to keep dogs small and to comfort old women, but all his Little Boy Blues are of much lower growth than mine. He suggested that my soil had been "too well done," but that is not the case. It has had nothing in the way of manure for a long time. I can only suggest that the soil being on the stiff side makes the difference. It is an interesting point. *Joseph Jacob.*

LIME.

BEFORE dealing with the use of lime on soils it will be useful to consider generally the properties of some of the forms of lime most frequently met with. Lime is the general name given to compounds of which calcium is the basic element. The commonest forms are:—

CaCO_3 , chalk, marble or limestone = carbonate of lime.

CaSO_4 , gypsum = sulphate of lime.

$\text{Ca}_3(\text{PO}_4)_2$ = phosphate of lime.

CaO , calcium oxide = quicklime.

CaOH_2O , calcium hydroxide = slaked lime.

The natural forms never occur pure, the most frequent impurity being magnesium compounds. The difference in the properties of natural forms is due to the presence of varying proportions of these impurities, and also to difference in crystalline form. These differences have a great influence on their chemical properties, as will be seen later.

Quicklime is formed by burning limestone or chalk. By this process carbonic acid gas is driven off, $\text{CaCO}_3 = \text{CaO} + \text{CO}_2$.

The mineral impurities in the original stone will be present in the product, as calcining does not effect purification to any material extent. When quicklime is exposed to the air or is wetted it rapidly absorbs moisture, and the process of "slaking" occurs with evolution of heat. $\text{CaO} + \text{H}_2\text{O} = \text{Ca(OH)}_2$.

The hydroxide is very soluble in water and is thus readily assimilated by plants, but it is also strongly alkaline and has a caustic effect completely destroying vegetable tissue. It readily combines with carbon dioxide forming first the carbonate of lime, which is nearly insoluble, and then the bicarbonate which is fairly soluble.

When burnt or quicklime is thrown on to the open ground the first result is that it slakes itself at the expense of any moisture that may be available. The effect of this is to destroy any tender rootlets with which it comes into contact, and in dry weather the effect on growing vegetation would be serious. The second stage is the hydroxide with its strongly alkaline reaction, which has the effect of disintegrating vegetable tissues. The final stages are the conversion of the hydroxide to the carbonate and bicarbonate by the successive action of carbon dioxide present in the soil from decayed organic matter. It must be noted that the carbonates and indeed all salts resulting from the combination of a weak acid with a strong base, act in an alkaline manner, hence the disintegrating influence of lime is continued in a milder form, even when fully carbonated. The lime salts of strong acids, e.g., sulphate of lime (gypsum or plaster of Paris) and phosphate of lime (bones) are strictly neutral, while the acid phosphate $\text{Ca}(\text{H}_2\text{PO}_4)_2$ which is the main constituent of commercial superphosphate of lime, is distinctly acid. The superphosphate of lime of com-

merce, which is used extensively as a manure, is a mixture of monocalcium phosphate and calcium sulphate, obtained by treating ground bones with oil of vitriol.

It will be seen that the chemical composition of burnt lime which has been exposed to the action of excessive moisture and CO_2 is the same as ground chalk or limestone, but there is, nevertheless, a considerable difference in their action. The action of slaking reduces the lime to a fine powder, and after being acted on by CO_2 it is usually in the fine amorphous state in which chemical activity is greatly enhanced. Ground limestone or chalk or, the other hand, may be crystalline, or the lime may be bound up with silica or magnesia in the form of double salts, and no amount of grinding will render it so chemically active. A limestone containing much magnesium or aluminium silicate yields what is technically known as poor lime; such lime slakes slowly and evolves little heat or hydration.

It should be mentioned that lime exists in the natural state in a large number of inert forms. The cause of this inertness is somewhat obscure. In some cases it arises from a difference in crystalline structure, and in others, to the formation of complex double compounds. Marble, for example, is the purest form of calcium carbonate, while the setting of mortar

quicklime, but in some degree it is possessed by all lime salts.

In this connection it is necessary to remember that the effect of this property is to arrest the natural processes of fermentation and decay in the soil, and in some soils this may be directly harmful. Lime, especially quicklime, must therefore be regarded in the light of a medicine which, while producing beneficial results in one direction, is harmful in others. The doctor has frequently to risk killing his patient in order to cure him, but he usually watches the symptoms, and applies his doses with discretion. The horticulturist who uses lime must be prepared to do likewise. *W. Auton.*

A GARDENERS' SOCIETY'S MONTHLY PUBLICATION IN CANADA.

In a recent number of *The Gardeners' Chronicle* we were extremely interested to see the notice taken by you of the monthly pamphlet issued by the Guildford Gardeners' Society to its members.

The Gardeners' and Florists' Association of Ontario has been issuing a similar publication



FIG. 144 CASES OF PRUNES READJUSTED FOR EXPORT AFTER STERILISATION.

and cement is due to the gradual absorption of atmospheric CO_2 and the formation of a complex silico-carbonate. In brief, the physical characteristics of lime compounds are of the utmost importance in their effect on chemical reactions.

The effects of lime in the soil may be summarised thus:—

(1) Lime acts directly as a food, calcium being an element essential to plant life. For this purpose burnt lime applied in the winter when no crops are actively growing is unquestionably the best, but ground limestone or chalk is a good substitute, and the lime contained in other manures added in winter to supply other constituents (such as superphosphate and basic slag) plays its part in supplying calcium to the plant.

(2) Certain compounds of lime act as neutralisers in correcting excessive acidity. Burnt lime, ground chalk, limestone or basic slag have this effect, but not superphosphate or gypsum. It must be borne in mind that soils may suffer from excessive alkalinity as well as excessive acidity.

(3) Certain compounds of lime act as disintegrating agents by virtue of their alkalinity. Burnt lime is most active in this respect, but ground limestone or chalk also act in this way to some extent.

(4) Lime acts as a germicide and disinfectant. This property is most pronounced in unslaked

for just about the same time as our Guildford friends, and I enclose a copy of our latest effort for your perusal.

Our membership consists of professional gardeners, and as our funds are extremely limited we have to do the best we can in the circumstances. The editor is a working gardener and with the aid of his gardener associates, not only supplies the copy, but does the multi-graphings and binding as well, the only cost to the Association being the printed cover, paper, ink and postage.

We thought this effort of ours, if a little primitive in its make-up, might also interest you, coming as it does from a body of men to whom *The Gardeners' Chronicle* is the first and last word in horticultural literature. *R. G. Thompson, Secretary-Treasurer, The Gardeners' and Florists' Association of Ontario, 17, Ellsworth Avenue, Toronto 10, Ontario, Canada.*

[Accompanying Mr. Thompson's communication was a copy of the publication which is entitled *The G. and F. Monthly*. It contains paragraphs of interest to the members and one page is entirely filled with cultural notes for August. The meetings of the winter session, which opened on the third Monday in September, should be very entertaining, for a paragraph states that the "Members are returning from well deserved holidays and are bringing all sorts and varieties of yarns which they are anxious to retail to willing listeners."—Eds.]

REMARKS ON THE CONDITION OF THE FRUIT CROPS

(See Tables and Summaries, Ante, pp. (111-116).
(Concluded from p. 315.)

WALES.

DENBIGHSHIRE.—The cold, sunless spring was very detrimental to the setting of fruits, and the crops are barely of average quantity. The only exceptions were Raspberries and Black Currants which gave heavy crops of good quality. Strawberries were good, but were quickly over owing to the drought. *F. C. Puddle, Bodnant Gardens, Tal-y-Cafn.*

GLAMORGANSHIRE.—Fruit trees, generally, bloomed freely, but owing to the cold and backward spring, and the absence of bees, many of the fruits failed to set, especially in the case of stone fruits. Apples carrying good crops of fruits are Beauty of Bath, Early Victoria, Allington Pippin, Bramley's Seedling, Bismarck, Newton Wonder and Lane's Prince Albert. Of Pears, although many trees are barren, we have a fair crop. Plums Victoria and Early Prolific, were the most plentiful, while Damsons were a fair crop. Gooseberries were a record crop; Strawberries also were very good. The soil is a heavy loam overlying limestone. *W. E. Wright, Henstaff Court Gardens, Pontyclun.*

—All fruit trees produced a large quantity of bloom, but owing to the unseasonable weather at the flowering period, the crops of Plums, Pears and Apples were ruined. The district was free from spring frosts, but prolonged cold, wet weather, accompanied by cold winds caused the damage. Bush fruits were very good, especially Gooseberries; Peaches and Nectarines were almost failures. Fruit trees look well and are free from blight. *C. T. Warrington, Penllergaer, Swansea.*

IRELAND.

MEATH.—The Apple crop is a total failure in Co. Meath, and so far as I can learn from growers, it is the same in all parts of Ireland. Wet weather in May ruined the Apple and Pear crops, and the blossoms were never dry. We had a small sprinkling of Plums. The fruit crops are the most scanty I ever saw in my lifetime. *Michael M'Keown, Julianstown, Drogheda.*

S. IRELAND.

KILKENNY.—As in most other districts, fruit trees of all kinds blossomed very freely this season, but the weather was not favourable at the time, and probably the flowers were lacking in strength after the sunless summer of 1924. Whatever the cause, most of the blossom failed to set fruits in anything like the quantity indicated at flowering time. Amongst small fruits Black Currants were the least satisfactory. The following varieties of Apples have fair crops: Lord Grosvenor, Grenadier, Gascoyne's Scarlet, Warner's King, The Queen, Royal Jubilee, American Mother, Barnack Beauty, Wealthy and Court Pendu Plat. *T. E. Tomalin, Bessborough Gardens, Piltown.*

TYRONE.—Tree fruit crops are very disappointing. Apples are the worst crop for over thirty years, after two very poor seasons. Pears are not much better. Plums, after apparently setting well, dropped wholesale when about the size of Peas. Cherries are very little grown in this district; those that have come under my notice carried fair crops. Small fruits were all good except Raspberries, which were small and late in ripening. Strawberries were very good though also late in ripening; the season was soon over. The continuous wet weather in April and May, together with cold winds were very injurious to the fruit blossom. Insects have not, so far, been very troublesome. I note an increase in the amount of Orange Cup fungus on Gooseberries. *Fred W. Walker, Sion House Gardens, Sion Mills.*

WEST MEATH.—The fruit crops generally are very much under the average. The wood ripened badly last autumn owing to constant rain and lack of sunshine. A wet and cold May (5.82 inches of rain) destroyed all prospects of good crops. *Wm. Allen, Pakenham Hall, Castlepollard.*

Co. DOWN.—For the third consecutive season the Apple crop is of a most disappointing character. Bramley's Seedling, Worcester Pearmain and Grenadier only are carrying a few fruits. The sparsely placed blossoms failed to develop in the wet, sunless weather. Pears and Plums fared somewhat better and have good crops. Small fruit were good crops, Strawberries being excellent. Our soil is of a very heavy nature and only a few feet above rock. *T. W. Bolas, Mount Stewart, Newtownards.*

Co. CORK.—All the fruit crops are below the average with the exception of Raspberries and bush fruits. Black Currants and Gooseberries under good cultivation cropped well in spite of the June drought. Strawberries were, on the whole, good, but the season was short. Raspberries suffered for want of moisture. Spur canker and die-back diseases were very prevalent on Cox's Orange Pippin, Blenheim Pippin, and a few other varieties of Apples. Saw-fly caterpillar on Gooseberries was a great pest this season and caused serious damage wherever spraying was neglected. *J. Dearnaby, 17, St. Patrick Terrace, Magazine Road, Cork.*

CHANNEL ISLANDS.

GUERNSEY.—The produce exported from Guernsey consists principally of Tomatos, Grapes, Melons and Figs, the bulk of which are grown under glass. Tomatos have done splendidly, and up to July 12 prices were satisfactory. Melons have been a satisfactory crop but are grown by a very limited number of growers; the same remarks apply to Figs. *W. Mauger and Sons, Brookdale Nurseries, Guernsey.*

—This is one of the worst fruit years on record. The trees were well set with fruit buds and they developed well, but at blossoming time there were cold, east winds which in a very short time ruined the prospects. There being an absence of lime in our soil stone fruits are, at the best, a very uncertain crop, but this year they were much worse than usual. *C. Smith and Son, Caledonia Nursery, Guernsey.*

HOME CORRESPONDENCE.

Cactus Dahlias.—*Horticulteur* has done a service to the Dahlia in writing his note (p. 275) on this subject. He begins by quoting the words of *H. S.*, which I again repeat as they cannot be too often emphasised. They are:—“With very few exceptions, the Cactus varieties are absolutely useless as garden plants.” This opinion was expressed by an able and experienced grower, and I am very glad to see it endorsed by another authority. I happen to know that *Horticulteur* has a vast experience of Dahlias. In the same issue, however, we have Mr. J. E. G. White (p. 268) writing thus in connection with Dahlias at Wisley:—“There seems to be little justification for the charge in a recent article that the Cactus Dahlia is absolutely useless as a garden plant, for although it must be admitted that the varieties of this section are not so early or so prolific as those of some other types, the peculiar form of the flower renders them particularly conspicuous in the garden, and when planted against a dark background of shrubs they can be of more value than any others.” Proof of such a statement is required. Will Mr. White state the names of such Cactus varieties? When he does I think it will be a matter of extreme simplicity to recommend sorts of a far more showy character in other sections of the Dahlia. I agree with *Horticulteur* that the tendency to exhibit Cactus sorts in Dahlia groups at the shows is detrimental

to the popularity of the Dahlia. Cactus varieties were wont to be shown almost exclusively some years ago, and the result was that the Dahlia fell into the bad graces of the gardening public. For several years there was but little interest taken in the Dahlia. The advent of the Colletterettes created a new era in the history of the Dahlia, and the present popularity of the flower rests very largely on this and other decorative sections. Cactus Dahlias are undoubtedly glorious flowers, but until the habit of the plant is improved and we get sorts with stiff stems thrown well above the foliage they are not wanted in the garden. The great interest taken in the flower in these days has induced some of the leading societies to offer large prizes for groups of Dahlias at their exhibitions. It is most unfortunate that Cactus sorts predominate in such groups. It is a feature that is most misleading to the would-be grower of the flower. There is one cure for this. A condition should be inserted in every schedule that no wiring of stems be allowed. The day is past for the use of artificial supports of this nature, and such use is certainly unnecessary. The group which was awarded the Coronation Cup at Holland Park show was notable for the fact that not a single stem was wired. The Royal Horticultural and other Societies must strengthen the hands of raisers, and they should make non-wiring compulsory. We should then see an end of varieties which are hopeless in the garden. *George M. Taylor, Edinburgh.*

Pendulous Begonias.—Your kindly reference to our Begonias at Holland Park Hall is very greatly appreciated, but your reporter is in error in stating that the Begonias in baskets were *B. Llodyi*. Our strain of these pendulous varieties was in existence long before *B. Lloydii* appeared, and had its origin in *Fleur de Chrysanthème* and *Marie Bouchet*, two old French varieties which we crossed with seedlings of our own; we now have several varieties which are propagated by cuttings. We call them pendulous or basket Begonias. *C. F. Langdon, Bath.*

Missing Butterflies.—In reply to Mr. S. B. Dicks (*Gard. Chron.*, September 26), there are many reasons which may account for the absence of Red Admiral (*Vanessa Atalanta*) and the Peacock (*Vanessa Io*) Butterflies. We depend entirely on spring migration from the continent for the presence of the Red Admiral in the autumn. There are very few cases on record of this insect hibernating and surviving the winter in this country. The Red Admiral is not a hibernating species at all, as so many people imagine it to be. The autumn brood is the progeny of migrants which have reached our shores from the continent earlier in the year, at the end of May or beginning of June. This season we have not had this large migration from the continent, and at most of the usual places on the coast where this insect occurs during the migration, very few have been seen. Where there are thousands in other years there are only tens this season. With regard to the scarcity of the Peacock Butterfly (*Vanessa Io*), this may be due to Ichneumon attacks, or to unfavourable spring conditions when the hibernated specimens should have been depositing eggs. The larvae of the Ichneumon Fly take an enormous toll of many species, and in some varieties I have found so many as seventy-five per cent. of the larvae attacked. The Peacock does hibernate in this country as an imago. At any time it is difficult to account for the abundance or scarcity of any particular species, and all fluctuate from year to year. Undoubtedly, much depends on the climatic conditions during some particular period of the life cycle, which accounts for these abnormal appearances or disappearances. *E. W. H. Lorton, Bedford.*

—In reply to Mr. Dicks' question (p. 252), my *Buddleia narboensis*, and especially *B. variabilis*, were covered with Butterflies this year, chiefly the Tortoiseshell kind, but I saw also the Peacock Butterfly. I am not quite sure about the Red Admirals: I think there were a few. *Mary I. Wells, Tieve, Ruon High Lanes, Cornwall.*

SOCIETIES.

ROYAL HORTICULTURAL

OCTOBER 20.—Although the weather was dismal and rain fell heavily during the greater part of the day, the interior of the R.H.S. Hall presented an unusually bright appearance to those who braved the elements. This meeting was devoted especially to Orchids, and the Orchid growers rose to the occasion by providing a feast of beauty in form and colour. Late, hardy flowers were shown freely, and there was a fine central group of stove plants arranged by Mr. L. R. RUSSELL. Several novelties attracted attention, some because of their beauty, others because of their interest.

Orchid Committee.

Present:—Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. C. J. Lucas, Mr. H. T. Pitt, Mr. J. Cypher, Mr. F. W. Flory, Mr. A. Dye, Mr. Fred K. Sander, Mr. A. McBean, Mr. E. R. Ashton, Mr. J. Wilson Potter, Mr. Frederick J. Hanbury, Mr. Stuart H. Low, Mr. Bertram J. Becton, Mr. H. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. H. H. Smith and Mr. T. Armstrong.

AWARDS OF MERIT.

Cattleya Mimosa var. *grandiflora* (*Venus × triumphans*). This is a finely-shaped variety of a hybrid Messrs. COWAN AND CO. have been showing well of late. The flower is rounded and the colour is golden amber with orange shading; the lip is rose-purple with a few dull gold veins in the throat. Shown by Messrs. COWAN AND CO., Southgate.

Laelio-Cattleya Profusion var. *Megantic* (*C. Hardyana × L.-C. Serbia*). A very fine form of this useful autumn-flowering hybrid. The very broad petals are a lovely shade of mauve, and the Tyrian purple lip has a fringed mauve edging, and old gold veins in the throat. Shown by Messrs. J. AND A. McBEAN.

Vuystekeara Edna, Stamperland var. (*Miltoni-oda Harwoodii × Miltonia Charlesworthii*). This gorgeous Orchid has fine flowers of rich, bright crimson, with rosy shading on the lip and a golden crest. The spike shown carried eleven expanded flowers. Shown by R. PATERSON, Esq., Stamperland, Cathcart, Glasgow.

Cattleya Lady Veitch, Rosslyn var.—A charming variety in which the lemon-throated lip is of especially fine form, and the pure white sepals and petals are of good breadth. Shown by H. T. PITT, Esq., Stamford Hill.

Mr. SHILL, gardener to Baron Schröder, The Dell Park, Englefield, brought up but did not publicly exhibit, two flowers of an exquisitely beautiful Orchid—*Potinara La Paz* derived from *Sophro-Cattleya Faboris* crossed with *Brasso-Cattleya The Baroness*; the large and shapely flowers are soft chrome yellow, and the handsome lip has a wide margin of old rose and old gold veins in the centre and throat.

AMATEURS' GROUPS.

A delightful and interesting group was arranged by H. T. PITT, Esq., (gr. Mr. Thurgood), Rosslyn, Stamford Hill. It is really wonderful how well Mr. PITT grows Orchids in London. A few good things were *Cattleya Mimosa*, Rosslyn var., *Brasso-Cattleya Penelope*, B.-C. Alderman, *Laelio-Cattleya Peter Pan*, L.-C. Carmencita, with a ruby lip and yellow sepals and petals; *Cattleya Hardyana* alba and *Brasso-Laelio-Cattleya Golden Crown*. The lovely *Cypripedium Boltonii* was also included, with *C. Chapmanii*, *C. Daisy Barclay*, *Coelogyne speciosa*, *Cirrhopetalum miniatum* and *Miltoni-oda Harwoodii*. We congratulate Mr. PITT on the award of the Silver Cup offered for the best amateur's group.

A very bright exhibit from S. J. JOYCE, Esq., Witley, Surrey, contained rather too many plants for the space allowed. It was a capital display nevertheless, and included good samples of *Odontoglossum grande*, *Vanda luzonica* with

two good spikes, *Cattleya Fabia* in good condition, *Laelio-Cattleya Linda*, *Cymbidium erythrostylum*, *Odontonia brugensis*, the yellow *Cattleya Aeneas*, and numerous good *Odontoglossums*.

SIR JEREMIAH COLMAN (gr. Mr. T. Collier), Gatton Park, Reigate, had a comparatively small group in which were fine specimens of *Cattleya Bowlingiana* var. *violacea*, with three spikes; *C. B. lilacina* with four spikes; *C. Browniae*, *Gatton Park* var., with a grand spike of about eighteen flowers; *Cypripedium Maudiae* and the graceful *Stenoglottis longifolia*. The plants were rather thinly disposed and there was need for "filling" in the background.

TRADE GROUPS.

Messrs. J. AND A. McBEAN exhibited a splendid group of Orchids which was very greatly admired. The plants were well-grown and pleasingly arranged. Very fine were the examples of *Laelio-Cattleya Profusion*, in variety; *L.-C. Hassallii* alba; the white *Cattleya Annette*, *C. Cowaniana* alba, and *C. labiata* *Ashstead Park* var.; *Cypripedium insigne* var. *Royalty* was finely represented, and is one of the very best of the golden *Cypripediums*; *Vanda coerulea*, *V. Kimballiana*, *Cochlioda vulcanica*, and *Cymbidium erythrostylum* were beautiful as well as interesting. Some good *Odontoglossums* and *Odontodas* were arranged along the back of the group and added their meed of grace to the wonderful colour of larger flowers beneath.

The central feature of Messrs. CHARLESWORTH AND CO.'s fine group was composed of fifty plants of *Dendrobium Phalaenopsis* carrying numerous graceful spikes of mauve and rose-purple flowers. On either side of the *Dendrobiums*, all capitally arranged, were *Oncidium varicosum* *Rogersii*, *Laelio-Cattleya Profusion*, *L.-C. Orebus*, *Sophro-Laelia Gratrixae* var. *magnifica*, with four flowers betraying their descent from *L. tenebrosa*; *Brasso-Cattleya Luegmanna*, *Sophro-Laelio-Cattleya* var. *Prince Hirohito*, the graceful *Wilsonara insignis* and numerous fine spikes of choice *Odontoglossums* and *Odontodas*.

Messrs. J. CYPHER AND SON contributed a collection which was notable for its selection of *Cypripediums* associated with *Laelio-Cattleyas* and *Brasso-Cattleyas*. Among the *Cypripediums* we were attracted by *C. Thalia gigantea*, *C. Olivia*, *C. Shogun*, the ever beautiful *C. insigni Sanderæ*, *C. The Baron*, the dark-hued *C. William Lloyd*, and the rosy *C. Leybournense*.

Mr. H. DIXON, Putney, showed such interesting Orchids as *Pleione lagenaria*, yellow forms of *Cypripedium insigne*, *Spathoglottis edensis*, *Lycaste Balliana*, and some *Dendrobiums*.

All the plants shown by Messrs. COWAN AND CO. had ample room to display their beauty to full advantage, while Ferns provided a suitable ground work. A few of their most notable plants were *Laelio-Cattleya Queen Mary*, *Cattleya Lady Veitch*, *C. Fabia*, *C. Daedalus*, *Brasso-Cattleya British Queen*, *B.-C. Fusilier*, and *Cypripedium Dreadnought*.

In a rather dark position in the annexe Messrs. STUART, LOW AND CO. displayed a goodly collection of Orchids, their group achieving considerable elegance from the use of *Oncidium varicosum* *Rogersii* and *Oncidium oblongatum* *citrium*. They showed fine plants of *Brasso-Cattleya Heatonensis*, *Laelio-Cattleya Profusion*, *L.-C. Dupreana*, *Cattleya Aeneas*, *C. Enid* and the golden-yellow *Brasso-Laelio-Cattleya Titania*; hybrid *Odontoglossums* in variety, *Sophronitis grandiflora*, *Cymbidium erythrostylum*, the small but rare *Cattleya bicolor* *coerulea*, and the pendant *Coelogyne densa*.

Messrs. BLACK AND FLORY had a group conspicuous for its brightly-coloured flowers, provided by plants of *Cattleya Thebes*, *C. Sylvia*, *C. Mimosa*, *Laelio-cattleya Carmencita aurea*, *L.-C. Lucretia*, *L.-C. Olenus*, *Brasso-Cattleya Juliet*, and *B.-C. Strathmore*. All these have yellow or golden colouring as a prominent feature and are thus very attractive in this dull time of the year.

The large display made by Messrs. SANDERS included numerous plants of the blue *Vanda coerulea*, *Cattleya Hardyana* in fine form;

Cattleya Fabia, in variety; *C. Peetersii* alba; *Laelio-Cattleya Queen Mary*, and *L.-C. J. J. Ansaldo*. Rising above the *Cattleyas* and similar plants were *Odontonia brugensis*, *Oncidium crispum*, *O. tigrinum*, the elegant *O. incurvum*, a very fine form of *Phalaenopsis Rimestadiana* and *Odontoglossum amabile*.

Floral Committee.

Section A. Present:—Mr. H. B. May (in the Chair), Mr. J. F. McLeod, Mr. H. J. Jones, Mr. J. M. Bridgeford, Mr. Donald Allen, Mr. W. H. Page, Mr. F. Streeter, Mr. F. G. Cousins, Mr. J. B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. Chas. E. Pearson, Mr. David Ingamells, Mr. M. C. Allwood, Mr. Andrew Ireland, Mr. Hugh Dickson, Mr. W. Howe, and Mr. E. R. Janes.

Section B. Present:—Mr. Chas. Musgrave (in the Chair), Mr. W. J. Bean, Mr. G. W. Loder, Mr. James Hudson, Mr. G. Reuthe, Mr. C. Williams, Mr. E. H. Wilding, Mr. G. Yeld, Mr. A. Bedford, Mr. F. G. Preston, Mr. W. G. Baker, Mr. E. A. Bowles, Mr. W. B. Cranfield, Mr. R. I. Trotter, Mr. Reginald Cory and Sir William Lawence.

AWARDS OF MERIT.

Arbutus Unedo rubrum grandiflorum.—The varietal names fairly describe this form of the well-known Strawberry Tree. Bean, in *Trees and Shrubs Hardy in the British Isles*, records that the rubra variety was found wild by Mackay near Glengariff in 1835, but had been known fifty years previously by Aiton. The present variety has rather larger flowers of the same pink colour. Shown by Messrs. R. GILL AND SON.

Berberis Jamesiana.—This is one of the many good *Barberis* in the collection at Wisley. Graceful sprays were shown which had spiny, purplish stems, neat foliage and many pendulous axillary bunches of bright berries very like in size and form to Red Currant fruits, but a trifle more transparent, and of a vermilion tint. Shown by the DIRECTOR, R.H.S. Gardens, Wisley.

Bomarea Matthewsii. The illustration of B. Carderi in *Nicholson's Dictionary of Gardening* gives a very good impression of the general appearance of this hybrid *Bomarea*, which was the result of crossing B. Carderi with B. edulis. The umbellate cyme, springing from a terminal of crowded leaves, contained twenty-eight flowers. The three outer segments were of a pale salmon colour, and the more delicate inner segments are tinged with the same colour and spotted with dull chocolate.

Bomarea Whittoni.—This hybrid was raised from the reverse cross, and resulted in the more valuable garden plant. The whole of the flowers were single stemmed and rounder than in the foregoing. The outer segments were pinkish and the three inner segments were creamy-coloured and prettily spotted with chocolate. Both hybrids were shown by the DIRECTOR OF PARKS, Glasgow.

Chrysanthemum James Baxter.—An exhibition Japanese variety which has all the attributes of a popular bloom. The flowers are of good size, compact habit, and the broad drooping florets are of old rose colour tinged with amaranth and flushed with crimson in the centre of the bloom. Shown by Mr W. BAXTER.

C. Mayford Yellow.—This should make a valuable market variety. The flowers are of medium size and made up of stiff yellow florets of considerable substance. Shown by Mr. H. SHOESMITH, Junior.

Colletia spinosa var. *rosea*.—Branches of the type and of the cruciata (*bictoniensis*) form were also shown, making an interesting exhibit of this diamorphic shrub. As shown, the new variety is distinctly more compact in habit than *C. spinosa*. It is very floriferous, and the flowers are attractively flushed with deep rose. Shown by Messrs. ROBERT VEITCH AND SON.

Myrtus Ugni.—This Chilean evergreen is a very common shrub in west country gardens where it is usually known as *Eugenia Ugni*, and the blue-black juicy fruits are often eaten.

It was introduced into this country in 1845. When in flower it is an attractive shrub, and at the present time it is well-furnished with fruits. Shown by Mr. G. REUTHE.

Viburnum theiferum—An upright, vigorous, deciduous shrub introduced from central and west China by Wilson in 1901. The ovate lanceolate leaves are rounded at the base, and attractively toothed. Its chief value lies in the plentiful clusters of bright red, ovoid berries. The monks of Mount Omi are said to use the leaves for infusing a sort of tea. Shown by Mr. G. REUTHE.

GROUPS.

Roses were splendidly shown by several growers. Mr. GEORGE PRINCE had exceptionally good blooms of many varieties, particularly of Los Angeles, Golden Emblem, Mabel Morse, Madame Butterfly, Betty Upchurch, Mrs. H. Stevens and Earl Haig. Chief in the collection of Messrs. ALEX. DICKSON AND SONS were Shot Silk, Betty Upchurch, Ophelia and K. of K. Messrs. CHAPLIN BROS. included goodly stands of Innocence, Madame Abel Chateau, Betty Upchurch, Ophelia and Mabel Morse in their exhibit. The Rev. J. H. PEMBERTON displayed Joanna Bridge, Bertha Turner and Penelope with other useful Roses.

Chrysanthemums were shown chiefly in spray-flowered varieties. Mr. H. YANDELL had lovely bunches of Dolores, Doreen Woolman, Golden Firebrand, Salmon Profusion and Golden Gleam, with othersorts. In addition, there were sprays of such sorts as Phoenix, La Garonne, Bronze Goacher and Well's Masse. Messrs. KEITH LUXFORD AND CO. showed good vases of dis-budded blooms of the white R. Roots.

Carnations of good quality were staged by Mr. C. ENGELMANN and Messrs. ALLWOOD BROS. The former included Red Laddie, Betty Lou, Orange Sunstar and Jazz, while the latter had good vases of Shot Silk, Chintz, Master W. Stoop, Wivelsfield Claret, and many vases of Dianthus Allwoodii.

There were several particularly good collections of Nerines. Mr. W. H. WALTERS had some splendid seedlings. He also showed Queen Mary, of lovely pink shades, Mrs. H. J. Elwes, a large truss of soft pink, and Miss Judith Elwes, soft salmon. The DUCHESS OF WELLINGTON, (gr. Mr. H. Buckingham), Ewhurst Park, Basingstoke, contributed an exceptionally good collection of spikes of Nerine Bowdenii, cut from the open ground, and also showed a plant of Strelitzia Reginae in flower.

Messrs. BARR AND SONS had a large collection of beautiful Nerines which included many seedlings of good type and beautiful colour, and such named varieties as Countess Bathurst, Scarlet Beauty, Knight Templar, Aglaia and elegantissima. They also showed the salmon-pink-coloured Schizostylis Mrs. Hegarty. Mr. G. REUTHE included a number of Nerines in his miscellaneous collection, amongst which were also Liliun tigrinum, Magnolia grandiflora ferruginea, a fruiting branch of Cydonia cathayensis and hardy border flowers.

A large floor group of particularly well-grown stove plants was exhibited by Messrs. L. R. RUSSELL, LTD. This included Codiaeums (Crotons) of rich colours, Dracaena Sanderiana, D. Victoria and other varieties. Pandanus Sanderiana, Alocasia argyroneura and several Nepenthes. Mr. HOWARD PALMER (gr. Mr. C. Moles), Heathlands, Wokingham, showed a splendid batch of Gesnera Orange King.

In a corner of the hall Messrs. WATERER, SON AND CRISP had a neat group of Conifers, Barberries, Retinosporas and other hardy shrubs. Messrs. PUTTERIDGE, LTD., showed many spikes of Delphiniums of good quality cut from plants raised from seed sown only a year ago. Mr. F. G. WOOD staged a rock garden with useful conifers and showed border flowers. Mr. H. J. JONES had another large collection of excellent Michaelmas Daisies, including Acme, October Dawn, Mauve Beauty and Harmony. Perennial Lobelias were again shown by Messrs. LADHAMS, LTD., with Heleniums, Erigerons and Michaelmas Daisies.

Tritoma (Kniphofia) parviflora, T. Royal Standard, Serbian Poppies and Achillea Rose

Queen were exhibited by Messrs. BAKERS, LTD. Mr. W. WELLS, junr., included Acme, Glory of Colwall, Louvain, Brightest and Best in his collection of Michaelmas Daisies. The MASSES HOPKINS exhibited border flowers, and Messrs. ISAAC HOUSE AND SONS showed their Scabious varieties. Chrysanthemums and Dahlias were shown by Messrs. W. GODFREY AND SON. Messrs. REAMSBOTTOM AND CO. staged St. Brigid Anemones, and Mr. J. J. KETTLE and Mr. BALDWIN PINNEY had many bunches of Violets.

Fruit and Vegetable Committee.

Present:—Messrs. J. Cheal (in the chair), W. Poupart, Geo. F. Tinley, E. Laxton, S. B. Dicks, A. Metcalfe, A. Bullock, A. C. Smith, E. Beckett, G. Kelf, H. Prince, E. Neal, T. Pate-man, W. H. Divers, and A. N. Rawes.

Several seedling Apples were submitted for Award, but only one, Lord Lambourne, was selected as worthy, and this received a provisional Award of Merit, the award to be contingent on the cropping qualities, habit, etc., of the tree, which will be inspected next season. This variety was shown earlier in the season, but the flavour then was not nearly so good as in the fruits submitted this time, in all probability because the others were not quite ripe. A late Apple named Warner's Seedling, shown by Mr. F. G. BULLOCK, Agricultural Department, Leicester, was promising, and the Committee expressed a wish to see this variety in January. The variety Lord Roberts, shown by LADY THORNYCROFT, is a fine yellow Apple that promises to keep late in the season, and fruits of this variety will be cooked and presented at the next meeting.

AWARD OF MERIT.

Apple Lord Lambourne.—This is a very handsome fruit raised from James Grieve crossed with Worcester Pearmain, and is in season from October to November. The fruit has the high colouring of Worcester Pearmain, but is not so conical as that variety, being somewhat like Cox's Orange Pippin, but with the eye set in a deeper basin. The stalk is about a quarter-of-an-inch long and set in a conical cavity. The skin is wholly flushed with red on the sunny side, and the shaded and basal part is mellow-yellow with a few dots. The flesh is sweet, juicy and of good flavour. Shown by Messrs. LAXTON BROS.

GROUPS.

Some very fine Apples were shown by Messrs. BUCKWELL, LOCKYER AND CO., LTD., Orpington, Kent. Apples, generally, are large and highly coloured this season, and the fruits of Crimson Bramley, Lord Derby, Blenheim Pippin, Encore, Lane's Prince Albert, Tyler's Kernel, Worcester Pearmain, Allington Pippin, Bismarck and Bramley's Seedling were splendid samples, representative of some of the most useful sorts in cultivation.

Mr. G. TRINDER, Fleet, showed Golden Hornet Raspberry which received the R.H.S. Award of Merit after trial at Wisley.

Messrs. SUTTON AND SONS showed a most interesting exhibit of Cabbages, including Savoy and Red Cabbages for pickling purposes. The various varieties were represented by uncommonly good specimens, and the exhibit was of great educational value. Couve Tronchuda the Portugal or Sea Kale Cabbage, has very thick petioles, and another interesting Cabbage was the Heading Chinese variety, which has long, fan-like leaves forming an open heart something like a loose-hearted Cos Lettuce. The Cabbages included Tender and True, Early Market, All Heart, Improved Winningstadt, Imperial and Maincrop, whilst of Savoy there were splendid heads of Best of All, Perfection, Sugarloaf, Dwarf Green Curled and Reliance. Mammoth heads of Rosette Colewort were also displayed: a useful Cabbage for its hardness. The biggest of the red Cabbages was Large Blood Red, and there were also samples of the smaller Dwarf Blood Red, both excellent sorts.

Mr. W. AUTON (gr. to Viscount Elveden), Pyrford Court, Woking, exhibited a collection of vegetables grown without farmyard manure. Although the specimens were not comparable to those usually shown in competitive classes,

they represented excellent produce for the kitchen, and included Beets, Cauliflowers, Celery, Cabbages, Savoy, Brussels Sprouts, Parsnips, Turnips, Leeks and Maize Cobs.

HOVE HORTICULTURAL.

THE annual exhibition of the Hove Horticultural and Allotment Holders' Association was held in the Town Hall, on the 16th ult. The exhibits numbered 650, compared with 550 last year, and the total number of exhibitors increased from 98 to 198. The Royal Horticultural Society's Bronze Medal offered to the exhibitor gaining the highest number of points in the first twenty-six classes was won by Mr. S. H. LUSH, and the Sir A. R. Sargeant Cup offered for the best collection of vegetables, open to Hove members, was won by Mr. E. J. RIDLEY. Councillor BULL, who is Chairman of Committee, offered a Silver Cup for a floral display, and this was won by Miss ANNAND, Manor House (gr. Mr. Quinnell). The Dennis Challenge Cup offered for a collection of vegetables was won by Mr. W. SINFIELD.

The show was under the patronage of the Borough Officials, and was opened by the President, the Mayor of Hove, Alderman W. Jago, J.P., who was accompanied by the Mayoress.

A number of non-competitive exhibits added greatly to the interest of the exhibition, and to these the following awards were made:—Gold Medals: to Mr. JAMES BOX, Lindfield; Messrs. J. CHEAL AND SONS, Crawley; Messrs. BALCHIN, Hove; Messrs. WOOLLARD, Brighton. Silver Medals: to Messrs. R. W. WALLACE AND CO., Tunbridge Wells; Messrs. GRIFFIN, Brighton; Messrs. ALLWOOD BROS., Haywards Heath; Messrs. TOOGOOD AND SON, LTD., Southampton; and the CHEZ NOUS NURSERIES, Newick.

ROYAL SCOTTISH ARBORICULTURAL.

A MEETING of the Council of the Royal Scottish Arboricultural Society was held at Edinburgh on the 14th inst. Sir John R. Gladstone, Bart., of Fasque, presided. It was reported by Sir Andrew Agnew, on behalf of the Education Committee, that within the next few weeks a lecture with suitable slides would be ready for loaning to members in rural districts for educational purposes, and that other arrangements were being made with the view of popularising afforestation. A small committee was appointed to revise the schedule for the next forestry exhibition with the Highland Society's show, which is to be held at Kelso next year, and also the schedules in connection with the plantation and nursery competitions to be held within the show district. With regard to the proposed excursion to Denmark in the last fortnight of June, 1926, the excursion committee reported that the expense would probably be greater than the ordinary working forester could afford, but it was suggested that the Council might be in a position to make available a number of grants of approximately one-third of the cost, which might result in allowing five practical foresters to attend the excursion who might otherwise be debarred on account of the expense. The Committee are also considering a suggestion that local excursions be organised with the help of local secretaries and committees with the view of making such events more popular and useful.

CARLUKE CHRYSANTHEMUM.

THE first of the series of Chrysanthemum shows in Scotland was held on the 9th inst. when the Carluk Chrysanthemum Association held its eighteenth annual exhibition. The prize schedule contained forty-three classes for pot plants and cut flowers, and the number of entries showed a considerable increase on that of last year, while the quality of the exhibits was of an exceptionally high standard. The principal prize-winners were Messrs. W. DICK, JAMES R. WEIR, GEORGE GRAY, A. REID, W. SMITH, JAMES TERTVIT, D. POLLOCK, P.

MELROSE and JOHN ALTON. Trade exhibits wereshown by Messrs. BANNATYNE AND JACKSON, Messrs. HAMILTON AND TORRANCE, and Mr. HOPKINS BUSBY. Mr. QUINTON MACFADYEN staged a fine collection of Pansies and Violas.

NATIONAL CHRYSANTHEMUM.

A MEETING of the Floral Committee of the National Chrysanthemum Society was held at the Royal Horticultural Hall on Monday, October 19, when numerous varieties were presented for consideration and the following awards were made:—

FIRST-CLASS CERTIFICATES.

Chrysanthemum James Baxter, 12a. — A large, reflexing Japanese variety of first-rate exhibition type. The colour is rosy amaranth with crimson shading over the centre of the flower. Shown by Mr. W. BAXTER, Lockerley Hall, Romsey.

Chrysanthemum Mayford Yellow, 12b. — A medium-sized, rich yellow decorative variety with very substantial florets, which suggests that the flower will travel well, and be of use for market purposes. The stems and foliage are alike excellent. Shown by Mr. H. SHOE-SMITH, Junr., Mayford, Woking.

AUSTRIAN HORTICULTURAL.

THE 116th horticultural exhibition held by the Oesterreichische Gartenbau-Gesellschaft has just taken place in Vienna, and it was a great success. True, conditions in Vienna at the present time are not what they were, and an exhibition nowadays has to do without the big displays which used to come from the gardens of the numerous wealthy amateurs of Austria-Hungary.

The show was held in a big, new hall, built for exhibition purposes by the Society, in conjunction with the company which runs the Vienna Fair, and all the exhibits gained greatly in appearance by the ample space, and the absence of the disfiguring pillars which spoilt the previous year's display.

The standard of quality of the exhibits was in every way exemplary. Dahlias among other good things being splendidly shown by a number of firms. There were a number of open air exhibits in the beautiful grounds surrounding the exhibition hall, notably one, of rather melancholy interest, from an association of cemetery gardeners, which showed that in this as in other branches of gardening, progress is being made in the direction of harmony and natural beauty. Needless to say, Conifers were to the fore, and represented by some splendid specimens, among other firms showing them being GEBHARDT, FÜSSEL AND CO., and OTTO TRUNNER, the same two firms also showing fruit trees in great variety. A pretty outdoor group was arranged by a firm with the title of "GARTENKUNST" (Garden Art), consisting of a tiny lawn in the foreground, trees to form a miniature shrubbery behind, and in the centre, a fountain surmounted by a statuary group.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

THE monthly meeting of this Society was held in the R.H.S. Hall, on Monday, October 12, Mr. Chas. H. Curtis presiding. Seven new members were elected. Three members withdrew interest which amounted to £7 14s. 10d., and the sum of £129 8s. 0d. was passed for payment to the nominees of two deceased members. The sick pay for the month on the ordinary side came to £62 5s. 0d., and in the State Section, to £72 8s. 4d.; Maternity claims totalled £11 10s. 0d. Grants were made to fifteen members in the State Section towards their dental, optical and surgical bills, the total amounting to £45 1s. 3d.; sixteen other cases were considered. The final arrangements were made for the Annual Dinner to be held at the Imperial Hotel on November 5. The Earl of Bessborough has accepted the invitation to preside, and will be supported by several well-known horticulturists. Tickets may now be obtained from the Secretary, 35, Alexandra Road, W.14, price 6/6 each.

Obituary.

Professor H. M. Lefroy.—Professor H. Maxwell Lefroy whose untimely death at the age of 48 was recorded in our last week's issue, was a distinguished entomologist and a man of remarkable personality. None who enjoyed his friendship or even his acquaintance could fail to discover Lefroy's whole-hearted devotion to science and scientific research. He spent himself out in their pursuit and as the event proved, gave his life for them. Engaged in investigating the insecticidal properties of certain gases, Lefroy, in his ardour, omitted to take precautions against their lethal properties, was overcome by their fumes and from the time he was discovered unconscious in his laboratory never regained consciousness. Although still a young man at the time of his death Prof. Lefroy had enjoyed wide experience and had done great work in entomology. After a scientific training at Cambridge he became in 1899 entomologist to the Imperial Department of Agriculture for the West Indies, which position he relinquished on his appointment as Imperial Entomologist for India. In 1912 Lefroy was appointed Professor of Entomology in the Imperial College of Science, London. This post offered great opportunities. Hitherto there had been in this country no institution of University rank in which training in economic entomology was provided. Prof. Lefroy, with the active assistance of the Governing body of the Imperial College, successfully filled that gap in our educational system. His ardour for research was communicated to his pupils, with the result that the science which he loved and taught so well has been disseminated and is being practised by the students who have worked under him and are now engaged in entomological pursuits in all quarters of the globe. Lefroy combined in a rare degree scientific knowledge and an understanding of the requirements of practice. He studied the life histories of the insect pests, ascertained at what stage pests are most vulnerable and devised means for attacking them in that stage. For some time, when the scientific department at Wisley was being enlarged, Prof. Lefroy acted in an official or semi-official capacity as entomologist to the Royal Horticultural Society, and those who came in contact with him could not fail to be impressed by the breadth of his knowledge and by the exuberance of his enthusiasm for scientific research. Then the war came and Lefroy's services were required for national purposes. He foresaw the plague of flies that was likely to arise as a result of the large and casual accumulations of manure in the neighbourhood of cavalry camps and it was whilst he was working partly at the Imperial College and partly at Wisley that Lefroy devised means for coping with this potential source of disease. Later on, he visited America and Australia with the object—which he achieved successfully—of preserving the accumulated stores of wheat from insect attack. Universal in his proclivities, Lefroy, at a later date, attacked and routed the boring beetle which was and is responsible for so much damage to timber. It is in no small part due to his knowledge and ingenuity that the timber-roof of Westminster Hall was saved from complete decay, and the method of treatment of that structure has supplied the architect with improved means of preserving wood from insect attack. Although frail in appearance Lefroy, as has been indicated, possessed unbounded energy and, instead of resenting, seemed actually to enjoy the innumerable calls that were made on his time and energy. Devoted to his friends and greatly beloved by them Lefroy, notwithstanding his wide knowledge and unselfish devotion to science, never learned to suffer fools gladly. It was as though he had some premonition of the brevity and uncertainty of life urging him incessantly to make the fullest use of the present. That he did; reckless of health, foregoing in large measure the ordinary enjoyments of life, his supreme enjoyment was in his work and that work he did right well.

TRADE NOTES.

WE are informed by Messrs. Barr and Sons, seedsmen, of King Street, Covent Garden, and Taplow, Bucks, that another firm of a similar name is being confused with theirs. We are authorised to state that the two locations mentioned above are their only addresses.

A MEETING of the Technical Committee of the Chamber of Horticulture was held on the 7th instant, Mr. A. S. Galt (Leeds University) presiding.

Mr. A. S. Galt was unanimously re-elected Chairman for the ensuing year; Mr. R. Seymour Copley, Vice-Chairman; and Mr. T. Parker, Hon. Secretary. The meeting specially expressed its appreciation of Mr. Parker's efforts on behalf of the Committee.

The functions undertaken by the Committee during the past two or three years in giving direct advice to the grower was discussed in relation to the Ministry's Advisory Scheme.

The Secretary reported that he had had interviews with the Horticultural Section of the Ministry of Agriculture on this point, when the Ministry informed him that the Chamber's work in advertising the Technical Committee for purposes of inviting the grower to submit technical problems to the Committee, cut across the existing Advisory Scheme of the Ministry.

The matter was fully debated and left to the Chairman to draw up a working scheme for presentation to the next meeting.

Mr. Seymour Copley asked the Committee to consider the question of a systematic inspection of Dutch bulbs imported into this country. He instanced recent heavy consignments, accompanied by the necessary certificate from the Phytopathological Service, and afterwards found to be infected with a disease. From one consignment of two-and-a-half tons only thirteen cwt. were good. Ideal conditions for the spread of the disease were offered in the district in which the bulbs were planted, one of the largest and most important bulb districts in the country. Specimens of the diseased bulbs were sent to Dr. Petherbridge, who replied that it was due to fusarium.

The Chairman asked whether a deputation should be sent to the Ministry, but Mr. Copley replied that in the first place a list of complaints should be tabulated and the opinion of growers taken as to the course to pursue. He was convinced himself that the bulb trade was sufficiently important to justify the Ministry taking action.

The Secretary announced that, with a view to assisting the Imperial Fruit Show and adding a further item of interest for the grower visiting the show, he had approached Mr. Galt with a view to giving practical demonstrations as to the control of insect pests and fungous diseases.

Mr. Galt replied that the Leeds University had given him permission to give such demonstrations, and that Mr. G. C. Johnson, a member of the teaching staff in horticulture at that University would accompany him. His demonstrations would be given on Tuesday and Wednesday, November 3 and 4, and he was also exhibiting examples of various types of Apples.

The Chairman said he thought attention should be drawn to the fact that there was at the present time an epidemic of Septoria apii in Celery. The only thing to do is to remove the diseased plant and burn it.

Mr. Copley said that some years ago he found it advantageous to soak the seeds in hydrogen peroxide.

Mr. H. W. Miles, M.Sc., recently Biologist at the Kirton Agricultural Institute, and now working on problems in the Lincolnshire area, was co-opted a member of this Committee.

MARKETS.

COVENT GARDEN, Tuesday, October 20th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Erica gracilis, 48's	
cuneatum	10 0-13 0	per doz.	24 0-30 0
per doz.		—nivalis, 48's per	
—elegans	10 0-12 0	doz.	24 0-36 0
Aralia Sieboldii	9 0-10 0		
Araucarias, per		Above varieties	
doz.	30 0-42 0	in 60's, per doz.	12 0-15 0
Asparagus plu-		—in Thumbs, per	
mosus	12 0-18 0	doz.	9 0-10 0
—Sprengeri	12 0-18 0	Marquerites, 48's	
Aspidistra, green	36 0-60 0	per doz.	15 0-18 0
Asplenium, per		Nephrolepis in	
doz.	12 0-18 0	variety	12 0-18 0
—32's	24 0-30 0	—32's	24 0-36 0
—nidus	12 0-15 0		
Cacti, per tray,		Palms, Kentia	30 0-48 0
—12's, 15's	5 0-7 0	—60's	15 0-18 0
Chrysanthemums,		Pteris, in variety	10 0-15 0
pot grown, in		—large 60's	5 0-6 0
variety, 48's per		—small	4 0-5 0
doz.	18 0-24 0	—72's per tray	
Crotons, per doz.	30 0-45 0	of 15's	2 6-3 0
Cyrtomium	10 0-25 0	Solanums, 48's per	
		doz.	12 0-15 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia (Mimosa),		Heather, white,	
per bun.	1 3-1 6	per doz. bun.	10 0-12 0
Adiantum deco-		pink, per doz.	9 0-12 0
rum, doz. bun.	9 0-10 0		
—cuneatum, per		Honesty, per doz.	
doz. bun.	6 0-8 0	bun.	18 0-30 0
Arums (Richardias),		Lilium longiflorum	
per doz.	0 0-8 0	long, per doz.	4 6-5 0
Asparagus plu-		—speciosum	
mosus, per bun.		album, per doz.	4 0-5 0
long trails, 6's	2 0-3 0	—short, per doz.	4 0-5 0
med. sprays	1 6-2 6	—speciosum	
short	0 9-1 3	rubrum, long,	
—Sprengeri, per bun.		per doz. blooms	2 6-3 0
long sprays	1 6-2 0	—short	2 0-2 6
med.	1 0-1 6		
short	0 4-1 0	Lily-of-the-Valley,	
Bouvardia, white,		per doz. bun.	24 0-36 0
per doz. bun.	12 0-15 0	Orchids, per doz.	
Camellias, white,		—Cattleyas	36 0-48 0
per box, 12's	3 0-3 6	—Cypripediums	5 0-7 0
Carnations, per		Physalis, per doz.	
doz. blooms	2 6-4 0	bun.	15 0-18 0
Chrysanthemums		Roses, per doz.	
—white, large		blooms, Rich-	
blooms, per doz.	6 0-7 0	mond	2 6-4 0
—yellow, large		—Liberty	2 6-4 0
blooms, per doz.	6 0-7 0	—Madame Butter-	
—pink, large		fly	2 6-4 0
blooms, per doz.	5 0-6 0	—Mme. Abel	
—bronze, large		Chateray	2 6-3 6
blooms, per doz.	5 0-6 0	—Melody	2 6-4 0
above colours—		—Molly Sharman	
—medium blooms,		Crawford	2 6-4 0
per doz.	3 0-4 0	—Ophelia	2 6-3 6
—white spray per		—Sunburst	2 6-4 0
doz. bun.	18 0-24 0	Scabiosa caucas-	
—yellow, spray,		ica, per doz.	
per doz. bun.	12 0-15 0	bun.	6 0-7 0
—pink spray, per		Smilax, per doz.	
doz. bun.	12 0-15 0	trails	3 0-3 6
—bronze spray,		Statice, mauve	6 0-8 0
per doz. bun.	9 0-12 0	Stock, English	
Cornflowers per		white	6 0-8 0
doz. bun.	2 6-3 0	—Violets	2 6-5 0
Croton leaves		—(Parina), per	
per doz.	0 9-2 6	bun.	3 0-3 6
Fern, French, per			
doz. bun.	10 0-12 0		
Gardenias, per			
box, 12's, 18's	5 0-6 0		

REMARKS.—The sudden change to colder weather last week was responsible for shorter supplies during Friday and Saturday last, and prices were firmer for all grades, especially on Saturday morning. Judging by the weather conditions this morning a further advance in the prices of all white blooms is to be expected. Supplies of Carnations and Roses are much reduced. Of Roses, the best sorts on offer are Golden Ophelia, Liberty, Madame Abel Chateray, Melody, Molly Sharman, Crawford, Madame Butterfly, Ophelia, Richmond, and Sunburst. All Liliums are firmer in price owing to a more limited supply. English Violets Princess of Wales are arriving in excellent condition. The newest subject in this department is scarlet Nerine, a few boxes of which are arriving from the Channel Islands. A good supply of Smilax is also arriving from this quarter. A few St. Bridgid Anemones have been marketed in good condition. The cooler weather is more suited to the transit of French flowers, and the small consignments of Acacia, Mimosa, Parnia Violets, Eucalyptus, red and white Chilies and Solanum berries are arriving in much better condition. The chief attention is given to flowering plants. White and pink Ericas are at their best. Pot grown Chrysanthemums are also more plentiful also good coloured Solanums. A few well flowered Cyclamens are selling

freely. Supplies of Ferns of various sizes appear sufficient for present requirements. Araucarias and Palms are somewhat scarce; they are marketed mostly in sixty and forty-eight pots.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Batavia	2 0-2 6	Onions—	
Beans—		—Dutch	6 0-7 0
—Scarlet Runner,		—English, per cwt.	7 0-8 0
bushel	3 6-6 0	—Valencia	9 0-10 0
Beets, per cwt.	6 0-8 0	Parsnips, per cwt.	6 0-7 0
Cabbage, per tally	0 0-9 0	Potatoes—	
Celery, per doz.		—King Edward,	
fans	10 0-24 0	per cwt.	5 0-7 6
Cauliflowers, per		—others	4 0-5 0
doz.	2 6-5 0	Sprouts, per bag	3 0-6 0
Carrots, per bag	6 0-7 0	Savoy, per doz.	2 0-2 6
Chicory, Belgian		Tomatoes, English,	
per lb.	0 5-0 6	per strike—	
Cucumbers, per doz.	4 0-5 0	—pink, new crop	5 0-6 0
—Flats, 36's, 42's	14 0-15 0	—pink & white,	
Dutch Onions	8 0-9 0	old crop	2 0-4 0
Endive, per doz.	1 0-2 6	—blue	2 0-3 0
Horseradish, per		—Guernsey	2 0-3 6
bundle	2 0-3 6	—Jersey	2 0-4 0
Lettuce, Cos, doz.	0 6-1 6	—Dutch	2 0-3 0
—cabbage	0 6-1 6	Turnips, per cwt.	5 0-6 0
Mushrooms, cups	4 0-5 6		
—Broilers	3 0-3 6		
—"Field"	1 0-2 0		

REMARKS.—Although not entirely satisfactory, business conditions have shown a little improvement. Imports of Apples from the United States, British Columbia, and Canada have not been quite so heavy, and a better tone has ruled for first-grade English Apples. Choice fruits, such as Grapes and Peaches, have been in steady demand, the prices of the former fruit keeping up well, considering the quantities of cold-house Grapes from Guernsey, and also the quantity of Belgian Grapes available. South African Oranges, although in variable condition, have met a keen demand, consignments moving out with some freedom. Green Figs, although plentiful, have sold well at good figures. Pears are scarce, and Californian, French, and home-grown fruits are in firm request. Nuts are in short supply, Cob Nuts being very scarce. Tomatoes are an improving trade, the fruits of the new crop particularly being enquired for. The first Canary Island Tomatoes are now competing with home-grown produce. Cucumbers show little or no fluctuation in prices. Forced Mushrooms are rather more abundant, with a slackening in quotation. Salads are a moderately good trade. Forced Potatoes and Peas from Guernsey are quoted lower, but both these vegetables should improve in price with colder weather. Green vegetables are offered at a reasonable value. The Potato trade is quiet with ample supplies for the demand.

GLASGOW

THE acute depression in the cut flower market continued during the past week, when it was again confined principally to Chrysanthemums, sprays of which could be purchased up till Friday at a penny per bunch. On that day an improvement in the demand was experienced, and as the registration of 12 degrees of frost during the night practically finished out-door blooms and meant a reduction in future supplies, prices made a little recovery. Taking the week as a whole the average values worked out as follows:—Sprays—Holme's White, Abercorn Beauty, El-tob Yellow, White Masse, Loan's Pink, Crimson, and Yellow, 1d. to 3d. per bunch; disbudded blooms—Delores and Sanctity, 6d. to 10d. for 6's; Almirante, 8d. to 1/2; La Paetole, 9d. to 1/2; Framfield White, 4d. to 6d.; Cranford Yellow, 1/- to 1/2; large Pink, 10d. to 1/2; No. 1 White, 8d. to 10d.; and Alcalde, 1/3 to 1/6 per dozen. Gladioli made 2d. and 3d. per spike. Carnations, 2/- to 3/- per dozen, and Roses (Ophelia, Madame Abel Chateray, and Madame Butterfly), 2/6 to 3/6. Prices for Liliums were practically unchanged at 4/- to 5/- for L. longiflorum (Harrisii), 2/- to 2/6 for L. lancifolium rubrum, and 3/- to 4/- per dozen for Richardia. Collette Dahlias were slow to move at 1/4d. to 2d. per bunch, while Pompon Dahlias ranged from 2d. to 4d. Michaelmas Daisies were worth 1/4d. to 3d. per small bunch and 3d. to 6d. per large bunch. Smilax was steady at 1/- to 2/- and Asparagus at 6d. to 1/6, according to size of bunch.

Consignments of Araucaria from Holland were disposed of at 6d. to 9d. per small pot, while green Aspidistras sold at 9d. to 1/- each and variegated from 1/- to 1/2. In the fruit market an active business was done in Apples at prices which need not be quoted as they are merely a repetition of the previous week's figures. There is no movement to report in either Pears or Grapes. These fruits are coming in freely in first-class condition, and the first-named in particular meet with a steady sale. Jamaica Oranges reached 2 1/2/- per case, Pomegranates, 13/6 to 14/6, and Victoria Plums, 10d.

Tomato prices displayed a drooping tendency, Scotch being worth from 6d. to 7 1/2d. and Jersey and Dutch from 3d. to 4d.

GARDENING APPOINTMENTS.

Mr. H. E. Cosham, as gardener to MAJOR CAPEL CURE, Blake Hall, Ongar, Essex.

Mr. J. A. Wiggins, for the past three years gardener to ALFRED BENSON, Esq., Kingswood Court, Tadworth, Surrey, as gardener to T. R. EDMOND, Esq., The Grange, Warrington, near Croydon, Surrey.

Mr. Geo. Toase, as gardener to JOHN LAWSON, Esq., Lower Grove, Rochampton Lane, Surrey.

Mr. A. E. Jackson, for the past four-and-a-half years gardener to Capt. J. D. BOTTERELL, The Browns, Egham, Surrey, and previously nine years gardener to W. W. BOUTON, Esq., Brasted Park, Witham, Essex, as gardener to Sir BECKLEY SHEPFIELD, Bart., Normanby Park, Southorpe, Lincolnshire. (Thanks for R.G.O.F. Box.—Eds.)

ANSWERS TO CORRESPONDENTS.

GREY FOLIAGED PLANTS. H. C. There is a wealth of suitable plants for your purpose. For a garden of small dimensions the following plants are the most suitable:—Lavender, Stachys lanata, Cineraria maritima, Artemisia stelleriana, Nepeta Mussinii, Lychnis coronaria alba, Celmisia speciosa argentea, Cerastium Biebersteinii, Amphyranthes albicans, Centaurea candidissima, and Pink Mrs. Sinkins. For larger plantings, taller and stronger growing subjects may be introduced such as Elymus condensatus, Eryngium Oliverianum, Echinop. Ritro, Yuccas, the Globe Artichoke, Seakale, Euphorbia Wulfenii and Gypsophila paniculata, the grey-white clouds of which are most effective. Greater variety may be added to the scheme by including such splendid grey foliaged subjects as Santolina incana and Phlomis fruticosa, while the glaucous-blue foliage of Ruta graveolens is peculiarly attractive. These all bear yellow flowers of a rather deep colour, however, and it may be necessary to remove the blooms when they detract from the effectiveness of the whole. If it is desired to enclose the garden by an informal hedge, Tamarix gallica, with its graceful grey-green foliage, is a delightful subject for the purpose, blending in perfect harmony with other greys. An expansive effect may be obtained by planting the silver-leaved Poplar, and Cupressus Allumii behind the informal and (in large scale planting) occasional groups of Hollyhocks, Gladioli and other plants bearing pale pink flowers which relieve the sameness and add to the charm of the garden.

NAME OF PLANT. J. E. H. Picea excelsa.

RASPBERRY CANES DISEASED.—R. A. If you will send us some of the diseased stems we will endeavour to help you in advising a remedy. The Rosemary bush which you state has become over-crowded and very leggy is not likely to make a shapely specimen again, and you would be advised to plant a new bush. Rosemary plants are not expensive.

TOMATOS WITH HARD YELLOW BASES. G. J. J.

The cause of Tomatoes forming hard, yellow, unripened patches at the base of the fruit is not due to organic disease, but is usually attributed to lack of potash in the soil. Some growers, however, assert that it is caused by a sudden burst of sunshine following dull, damp weather when the fruits are ripening. In any case, you would be well advised to use a potassic manure next season, such as sulphate of potash or kainit, or you might use wood ash in the compost, which would serve the same purpose.

TOMATO FRUITS DISEASED. S. C., Lithuania.

The Tomato fruit you submitted to us is attacked by the Potato-blight fungus, the Phytophthora infestans, the lesions of which are brown in colour. The black patches on the fruit are due to the presence of a species of Cladosporium and also Macrosporium solani.

TOMATO-WILT DISEASE. R. J. W.

The Tomato root is attacked by the wilt-producing fungus, Verticillium albo-atrum. This fungus is an infection in some soils, and the use of soil sterilised by steam or baking is the best means of preventing this disease. The disease is a low temperature one and infected plants will recover if transferred to an average day and night temperature of not less than 77°.

Communications Received.—E. G. S.—T. M. & S.—J. K.—A. B. C.—T. H.—G. F.—H. M.—M. C.—F. B.—S. P. S.—R. O. C.—E. C.

SCHEDULE RECEIVED.

HITCHIN CHRYSANTHEMUM SOCIETY.—Exhibition to be held in the Town Hall, on Thursday, November 12.—Secretary, Mr. W. G. P. Clark, 4, York Road, Hitchin.

THE Gardeners' Chronicle

No. 2027.—SATURDAY, OCTOBER 31, 1925.

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AVERAGE MEAN TEMPERATURE for the ensuing week
deduced from observations during the last fifty
years at Greenwich, 45.9°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street,
Covent Garden, London, Wednesday, October 28,
10 a.m. Bar. 30.1. Temp. 58°. Weather Fine.

Many experiments have been made on the effect of radio-active substances on plant growth; but so far no very conclusive results have been obtained. The most recent contribution* to this subject by the well-known biochemist, Professor Stoklasa, Director of the Czecho-Slovakian Experiment Station for Crop Production, Prague, suggests, though it can hardly be said to demonstrate, that radio-activity plays an important part—as a sort of satellite to the sun's radiant energy—in the photosynthetic processes of plants. The starting point from which Professor Stoklasa reached this interesting conclusion was the investigation of the radio-activity of the volcanic gases liberated by Mt. Vesuvius. By measuring the electric conductivity of the gases it is possible to estimate the intensity of their radio-activity and by this method the author was led to the conclusion that the gases issuing from the volcano have a very high radio-activity. Moreover, as a result of the diffusion of the radio-active volcanic gases, the atmosphere of the neighbourhood even so far away as Naples also

becomes markedly 'radio-active'. Nor is it only in volcanic regions that atmospheric radio-activity reaches a relatively high intensity. A like state of affairs is found also to occur in the atmosphere at Mulhouse in the neighbourhood of the "potash" mines. In the mines themselves, rich in potash salts, the electric conductivity of the atmosphere, and apparently therefore its radio-activity, is as high as in the neighbourhood of Vesuvius. This according to Prof. Stoklasa is a fact of great significance, for potassium gives out Beta rays and, if we accept his statement, Beta rays have a definite effect on the process of photosynthesis carried out by green plants. Prof. Stoklasa maintains that atmospheric radio-activity of the soil favours the development of Leguminous plants—especially of Spartium junceum and of Robinia Pseud-acacia which are among the pioneers of vegetation. He also states that the activity of nitrogen-fixing bacteria is favoured by radium emanations and he implies that the well-known remarkable fertility of the Italian Campana is due to the richness of the soil in nitrogen-fixing bacteria which in turn is attributable to the high radio-activity of the soil. Prof. Stoklasa's final conclusion is interesting albeit, as we may suppose, provisional. It is that the manufacture of sugars by the green leaf is a process favoured alike by the sun's radiant energy and the Beta rays and that it consists primarily in a decomposition of potassium bicarbonate in the green cells. As a result, potassium carbonate is left and carbon dioxide is liberated. The carbon dioxide is decomposed by light and radio-activity with the production of substances which give rise to sugars. In other words and according to these conjectures the world depends for its food supplies not solely on the radiant energy of the sun but also on atmospheric and soil radio-activity. Sooner or later there is bound to impend that crisis in the world's history foreshadowed long ago by Professor Crookes when the food supplies will be insufficient to meet the demands of mankind. The large scale manufacture of synthetic nitrogenous manures which is being carried on by Germany and other countries has already ensured the postponement of the evil day. It is, however, a postponement only and not an indefinite adjournment; but if radio-activity may indeed be employed to reinforce the radiant energy of the sun as a source of power for the green plant's food-synthesising processes, we and our successors may sleep securely of nights without being haunted by the spectre of cosmic starvation. Furthermore, if as has recently been claimed, the secret of the plant's powers of synthetic sugar production has been discovered, the time may be at hand when the chemist will come to the assistance of the world and compound our food more economically and expeditiously than the green plant is able to make it.

Portrait of Lord Lambourne for the New R.H.S. Hall.—Sir William Lawrence writes:—"Lord Lambourne, the President of the Royal Horticultural Society, has, with characteristic bonhomie, acceded to the unanimous wish of his colleagues on the Council of the Society and consented to have his portrait painted. Mr. Wilfred de Glehn, A.R.A., has been commissioned to paint the picture, which will hang in the great new Hall which the Society is about to build in Westminster. Horticulture has never had a more devoted servant. In spite of the severest domestic bereavement,

and of frequent ill-health, Lord Lambourne has with the greatest of courage continued to preside over the meetings of the Council, and to guide its policy with mature judgment and sound common-sense; the great and increasing success of the Society is largely due to his benevolent control. All lovers of gardening, whether amateur, professional, nurserymen, or seedsmen, regard him with the same warm affection as do his innumerable friends in other walks of life, and I invite them one and all to unite in this commemoration and to send their subscriptions to the Chief Cashier, Royal Horticultural Society, Vincent Square, Westminster, S.W.1."

Prices of Potatoes.—According to the *Agricultural Market Report* issued by the Ministry of Agriculture the wholesale markets are well supplied with Potatoes, and although trade continues slow except for the best samples, recent prices have been maintained and in some cases advanced. The first quality Arran Chief, Majestic and Lincolnshire-grown King Edward now average £5 6s., £5 7s. and £7 1s. per ton respectively. The prices in the Wisbech area are somewhat lower, King Edward making £4 10s. to £6, British Queen, £4 5s. to £4 10s., and other white varieties £3 10s. to £4 per ton.

Flowers in Shop Windows.—The *Covent Gardener* for October, a monthly publication by the firm of Messrs. G. Monro, Ltd., draws the attention of florists to the possibilities of increasing the sale of flowers by the decoration of shop windows. It states that in London the displays of flowers in shop windows has gone up by leaps and bounds, and that tailors who used to display Heather prior to August 12, now have something more or less appropriate throughout the year, and it is questionable, states *The Covent Gardener*, whether the possibilities of this development, either in London or the provinces has yet been fully exploited. A considerable amount of this "monthly" is devoted to Messrs. Monro's Sundries Department, which has been reorganised during the past month or so.

Impressions of American Horticultural Visitors.—A few of the many horticultural visitors to Europe during the present season are relating their experiences in the American horticultural Press. Mr. Max Schling states that England is a country of flowers. The finest Chrysanthemums in September are equal in quality to Chrysanthemums grown in the greenhouses in America at the height of the season. There are wonderful Roses, Carnations grown to perfection, Asters, Gloxinias, Primulas, Cyclamen and most wonderful Hydrangeas. Mr. William N. Craig, writing in the *Gardeners' Chronicle of America*, states Great Britain is really one big, well-kept garden, and he gives high praise to the way in which our flowers are staged at exhibitions, about which he states Americans have still much to learn. He visited many interesting gardens in this country, and he states that Bodnant Hall, in North Wales, appealed to him so much that he proposes to write a special article about the gardens there.

Aluminium and Plants.—The *International Review of the Science and Practice of Agriculture* for July-September contains an article by Prof. Dr. Julius Stoklasa, Director of the State Experiment Station of Czecho-Slovakia and Professor of the Higher Technical School, Prague, on "Aluminium in Organic Life." From his account aluminium plays a part of considerable importance in the economy of plants, especially in certain families. He has discovered that xerophytes, that is, plants that live principally on the sandy sea-shores, prairies, deserts and other dry areas, are distinguished by a low aluminium content, whereas hygrophytes are notable for a high aluminium content. One of the most interesting conclusions is that aluminium possesses the interesting property of participating in the formation of colouring matter in flowers. He has discovered that aluminium with iron and manganese has a great influence in the colouring matter dissolved in the cell sap. These

* *International Review of the Science and Practice of Agriculture*, International Institute of Agriculture. April—June, 1925.

three elements not only increase the intensity of the colouring, but also cause changes in the latter, white and pink flowers becoming red, and possibly violet or blue and yellow ones changing to red. Another important point from the cultivator's point of view is that when aluminium compounds are present where iron exists in great quantities in the soil, phasmolysis does not take place; the aluminium combines with various bodies in the cell sap and hinders the entrance of iron and manganese compounds into the cells. He makes the interesting observation that in nearly all cases plants which prefer dry surroundings, the flowers of which are poor in aluminium or contain none at all, are either white or yellow. Prof. Stoklasa concludes by saying that "the statement that aluminium compounds in the soil have an injurious effect upon plant growth is based on no exact experimental foundation. In the majority of moist soils rich in organic matters, the injurious acidity is caused by the natural humic acid."

Allotment Gardens at Glasgow.—The Glasgow Corporation Parks Committee has decided that the allotment plots still in the public parks of the city are to be continued for another year as from January 1 next on the understanding (1) that none of the existing plots be re-let to new applicants; (2) that the present plot holders intimate before December 31 whether they are prepared to re-take their plots, failing which the plots are not to be re-let; (3) that no plot holder be permitted to hold more than one plot; and (4) that the director be authorised to re-let the plots in such a way as to group all unlet plots and thereby allow of the ground being restored for parks purposes.

A Large Tree Order.—The Irish Free State Government has placed an order for 920,000 forest trees with Messrs. Wiseman, Elgin, which is said to be one of the largest nursery contracts ever placed in Scotland.

The Iris Society.—A meeting of the members of the Iris Society will be held at the Grosvenor Hotel, Victoria, S.W., on Tuesday, November 17. The meeting will be preceded by a dinner at 7.15 p.m., and the price of the tickets is 1/6 per head. The principal subjects for discussion will be the methods of judging Irises on trial at Wisley and the making of awards in general to varieties of Irises.

Phosphate deposit in Ireland.—A large deposit of phosphatic rock has been discovered at Noughaville, near Kilferona, County Clare. The outcrop is said to extend for a full statute mile, the rock being from three feet to twelve feet thick along its entire length, and contains 75.4 per cent. of phosphates. The fertiliser is already being marketed and is being bought by growers.

William Watson Memorial Fund.—We are asked to state that subscriptions amounting to £35 have been received towards the erection at St. Albans of a memorial to the late Mr. William Watson. As the fund will be closed on November 14, those who propose to contribute are requested to do so before that date. All communications should be addressed to Mr. Ernest G. Dunk, Secretary of the Kew Guild, 197, Kew Road, Kew, Surrey.

Chrysanthemum Shows in the London Parks.—Dame Beatrix Lyall, Chairman of the L.C.C. Parks Committee, writes:—"May I ask for a little of your valued space so as to inform Londoners of the beautiful displays of Chrysanthemums which are being held in five of their parks. The displays, distributed as equally as possible throughout London, are at Battersea Park (Albert Bridge Gate), Waterlow Park, Finsbury Park, Victoria Park (north-west corner near St. Agnes gate) and Southwark Park, are open all day and, although admission is free, there are no crowds except on Saturdays and Sundays. Few Londoners, apart from those living close by, appear to

know of these Chrysanthemum shows or indeed of the many beautiful parks dotted about London, so that this may be an opportunity of which flower lovers will be glad to take advantage."

Mr. A. Sewell.—The high esteem in which Mr. A. Sewell is held in Cambridgeshire is due to his skill as a cultivator and his willingness to assist in spreading a love of gardening. He commenced his horticultural career in the gardens at Castle Hill, Huntingdon, and afterwards served an apprenticeship with Mr. T. W. Cooper, The Walks Nursery. Having completed his apprenticeship, he went to Cleveland, Ohio, U.S.A., where he remained for some time, and added considerably to his general knowledge and experience. Returning to England he secured employment in certain Hampshire gardens, and in 1907 was appointed gardener at The Palace, Ely. These gardens contain a huge Plane tree, planted in 1674 by Bishop Gunning, and, according to *Trees of Great Britain and Ireland*, this is one-hundred-



MR. A. SEWELL.

and-four-feet high, with a girth of twenty-and-a-half-feet; and a Pear tree, planted by Bishop Keene, and assumed to be not less than one-hundred-and-thirty-years old. In these old-world and beautiful gardens Mr. Sewell served the late Bishop Chare for twelve and-a-half-years. During the war he served in the Seventeenth Battalion of the Essex Regiment, and, at the request of the War Office, took meteorological observations for the Royal Balloon Factory at Farnborough. At present Mr. Sewell is gardener to Mrs. A. Vince Gibbs, at Nyton, Ely.

Proposed Destruction of the Holly Hedge at The Wilderness, Croydon.—Most of our readers will remember that the late Rev. W. Wilks, so many years secretary of the Royal Horticultural Society, had a charming house and interesting garden at The Wilderness, Shirley, Croydon. We learn with deep regret and alarm that the fine Holly hedge he planted twenty years ago along the Shirley Church Road, now about ten-feet high and very dense, is likely to be destroyed as a consequence of the proposal of the Croydon Corporation to widen the road, on The Wilderness side, by twelve feet; the opposite side of the road has been widened during the past year, and as there seems to be no reason for further widening, the destruction of such a fine hedge would be sheer vandalism. The Royal Horticultural Society has a reversionary interest in The Wilderness house and garden, the late

owner hoping that some day the little estate might become the official residence of the R.H.S. secretary; consequently, at a recent public inquiry on the subject of widening the road referred to, Mr. Frank Reader represented the R.H.S. The chairman of the meeting appears to have been entirely unsympathetic, and treated objections cavalierly. We understand that the Croydon Corporation is also proposing to widen Shirley Church Road at the Vicarage. If this proposal is carried out it will necessitate the destruction in whole or in part of another solid Holly hedge, seventy years old, thirty feet high, and six feet through. What are the several horticultural societies in Croydon doing to prevent the destruction of these beautiful features?

Bridgewater Square.—The proposal to build over Bridgewater Square, Barbican, London, reminds us that this tiny square in the heart of the dry-goods quarter of London is all that is left of the gardens and orchards of Bridgewater House, formerly famous for their fruits. The mansion of the Earls of Bridgewater was burned down in 1637, and soon after this a goodly portion of the ground was built over, the square alone remaining. It has fallen upon evil days, the trees described by Strype as rendering "the place very delightful" are decrepit with age where they are not actually dead, and the ground is infested with moss; only the hedge surrounding the garden, just inside the iron railings, shows any signs of vigour. It would not, however, cost a great deal to put the place in order, and it seems a pity to destroy one of the few remaining gardens in this part of London. The success and popularity of the "Postman's Park" only a few hundred yards distant from Bridgewater Square is an example of what can be done by the exercise of energy and vision at the right moment.

Mariemont College, Belgium.—The students of the Horticultural College, Mariemont, Hainault (Belgium), are fortunate in the situation of their college, which is established on the estate of Warocqué, a lovely domain covering fifty hectares. It was originally the property of Marie of Hungary, sister of Charles XV, and the ruins of her sixteenth century palace still forms one of its beauties. The college is placed on an elevation, close to the forest of Mariemont and several private estates, and forms a veritable oasis of beauty in the industrial region of central Belgium. The château, now a State Museum, houses a wonderfully rich collection of treasures, chiefly collected by the late owner, Racul de Warocqué, in his long and varied travels. The college was established in 1920, and the curriculum includes courses in horticulture, sylviculture, pisciculture, farming, landscape gardening, and many other allied subjects.

Flowering Plants of South Africa.—No. 19 of Vol. V., being the issue for July, 1925, of the *Flowering Plants of South Africa* contains illustrations and descriptions of the following ten plants.—*Stapelia gigantea* var. *pallida*, t. 181, has the disc portion of the corolla well depressed and much lighter in colour than in the type. Apparently it is an intermediate form between the species and *S. nobilis*. *Gladiolus cruentus*, t. 182, was first described in *Gard. Chron.*, 1868, p. 1138. This is a very beautiful flower with scarlet segments, the inner ones blotched with white at the throat and covered with red spots. It is a native of the mountain area of Basutoland. *Gazania suffruticosa*, t. 183, has yellow flowers developed from the leaf axils. The foliage and stems are glaucous, and they are covered all over with cobwebby hairs; the leaves are somewhat succulent and extremely brittle. *Lachenalia rubida* var. *tigrina*, t. 184, has been in cultivation in Europe for over one-hundred-years. It is not so showy as some *Lachenalias*, the somewhat loose flower spike bearing only six or seven blooms, which are speckled with red on a yellowish ground. *Protea Mundii*, t. 185, has conspicuous red veins and red margins to the foliage and reddish stems. The flower head

is terminal and sessile, the conspicuous parts being the involucre bracts; *Strelitzia Reginae*, t. 186, is a well-known plant in cultivation. The illustration is a very faithful representation of the inflorescence. *Aloe arborescens* var. *frutescens*, t. 187, forms an arborescent, branched shrub producing solitary inflorescences of reddish flowers. The type was first described by Miller in the *Gardeners' Dictionary*, edition 8, No. 3 and not, as stated, in *Gard. Chron.* *Dermatobotrys Saundersii*, t. 188, is an epiphytic member of the *Scrophulariaceae*. It differs from most members of the family in having five well-developed segments. It grows on *Calodendron capense*, and its habitat ranges from Kentani to Zululand. The tubular flowers are red. *Crassula laticephala*, t. 189, forms a dwarf, succulent plant not more than four-cm. to five-cm. high. The leaves are four-ranked, and the inflorescence is borne on the apex of the plant, forming a somewhat unattractive head. And, lastly, *Haemanthus albidus*, t. 190, is a well-known garden plant at one time common in cultivation in warm houses.

Rat Week.—The Ministry of Agriculture has fixed the week commencing November 2 as the National Rat Week for this year, and upwards of 600 local authorities under the Rats and Mice (Destruction) Act, 1919, in England and Wales have been invited to take special steps in the furtherance of the campaign. Concerted action by all authorities in the one week is essential if the maximum destruction of rats and mice is to be obtained. Preparations for the special effort are now being made by most of the authorities responsible.

Linnean Society's Library Catalogue.—The new edition of the catalogue of the Library of the Linnean Society is now ready for delivery to Fellows who order it on the prescribed form. The new edition incorporates all the additions to the library during the past twenty-nine years, is of demy-octavo size, printed in brevier type, and extends to eight-hundred-and-sixty pages. The price to Fellows of the Society is 18/6 in paper wrapper and 21/- bound in cloth. Enquiries concerning the catalogue should be made to the general secretary, Dr. B. Daydon Jackson, Burlington House, Piccadilly, W.

Suggested Tour of British Horticulturists in France.—The Chamber of Horticulture proposes to arrange a tour of British representatives in France in connection with the annual conference of the *Fédération Horticole Internationale Professionnelle* in 1926. It is suggested that the itinerary should comprise a three days' tour in Paris and three days in Orleans and Angers. The Secretary of the Chamber of Horticulture has received instructions from his Council to make investigation regarding such a visit, and to report in due course.

Appointments for the Ensuing Week.—Sunday, November 1: Wakefield and North of England Tulip Society's meeting. Tuesday, November 3: West of England Chrysanthemum Society's show (3 days); Royal Horticultural Society's Committees meet; Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, November 4: Kingston, Surbiton, The Dittons and District Chrysanthemum Society's show; Winchester Horticultural Society's show (2 days); Bath Gardeners' Society's show (2 days); National Viola and Pansy Society's meeting; Highgate and District Chrysanthemum Society's show (2 days). Marlow Chrysanthemum Society's show; Guildford and District Chrysanthemum Society's show (2 days); Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Royal Agricultural Society of England Council meeting. Thursday, November 5: National Chrysanthemum Society's show (2 days); Bedford and District Chrysanthemum Society's show; Nottingham and Notts Chrysanthemum Society's meeting; Taunton and District Chrysanthemum Society's show; Linnean Society's meeting; Henfield Chrysanthemum Society's show. Friday, November 6: Dundee Horti-

cultural Society's lecture; Corn Exchange Chrysanthemum and Fruit Society's show; Leeds Paxton Society's show (2 days); Manchester and North of England Orchid Society's meeting. Saturday, November 7: Accrington Chrysanthemum Society's show; Antwerp show (3 days); Blackburn and District Horticultural Society's meeting and lecture.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Window Gardens of London.* Either amateur gardeners are becoming more skilful, the London atmosphere much clearer, or the speculations of bygone days were fallacious, for during a recent stroll from Belgravia to Temple Bar the appearance of the numerous balcony gardens (and they are become quite a feature in the street scenery of the great

leading from the Strand, is a window garden of more than ordinary magnitude. *Lysimachias*, *Geraniums*, *Chrysanthemums*, and numerous other plants, were rambling with a luxuriance quite incompatible with the ordinary ideas of a floral display in London. And in almost every street, however apparently unsuited for gardening operations, windows full of healthy plants are sure to gratify the eye of the pedestrian. There is one circumstance upon which I must beg to become critical. I know I touch upon a delicate point, yet I feel assured that those numerous window gardeners who read *The Gardeners' Chronicle* will take the little bit of criticism in the same spirit as it is given. I allude to the red pots, which offend the eye at every turn, and materially detract from the otherwise pleasur-

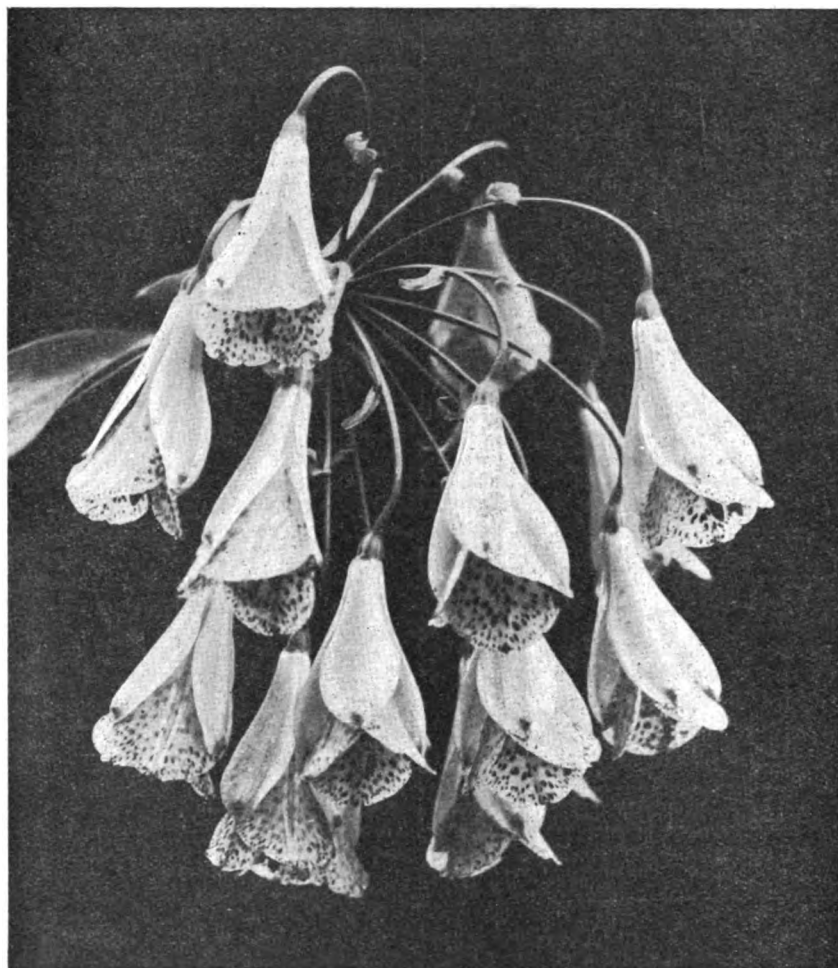


FIG. 145.—BOMAREA WHITTONII.

R.H.S. Award of Merit, October 20; B. edulis × B. Carderi; flowers pale salmon with chocolate spots. Shown by the Director of the Glasgow Public Parks.
(see p. 337).

metropolis) was directly opposite to what one would infer if he had lived in the country all his life and formed his opinions from what he had read of the soot-loaded air of London. The plants for the greater part were in tint that would not have disgraced the window-sill of a villa at Hampstead; and mingled with them were trusses of flowers in every way beautiful; and I could not admire them without mentally ruminating upon the amount of gratification which their owners must derive from the possession of such objects in localities where there is so little to remind one of the green fields and flowery banks, of sunny skies and summer rambles. Foremost as a window plant in the closer streets is the trailing *Lysimachia nummularia* (Money-wort) of our English meadows, and a very pretty and graceful adjunct to a London, or indeed any balcony, it certainly is. In Essex Street,

able sensations conveyed by the healthy plants occupying them. Not satisfied with the self colour of the pots (in itself quite bad enough) their possessors annoint them with some pigment of a fiery red colour, quite distressing to look at. I am somewhat puzzled to account for a seeming anomaly in this respect, which I observed at a mansion, I think, in Belgrave Square. At the first floor windows were some plants rejoicing in all the pride of newly coloured red pots, and that immediately above them some neatly executed vases, in imitation of stone, were the receptacles of some plants in every way similar to those in scarlet livery. The contrast was so marked that I could not but pause to admire the one, and to notice how exceedingly the other suffered by the comparison. *George Lovell, Gard. Chron., November 2, 1850.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Laelia.—Plants of the dwarf-growing *Laelia pumila* that have been placed in the cool house during the summer will be benefited by being removed to a house having an intermediate temperature. They should be hung near to the roof-glass, where sunlight will assist the flowers to open and further the development of the new growths. The blooms are less liable to become spotted than if the plants are allowed to remain in a cooler temperature. The roots should be well supplied with water during the time the plants are in active growth, but much less water will be needed after the new pseudo-bulbs are fully developed, although care should be taken that they never be allowed to suffer from lack of moisture. These Orchids are best grown in shallow pans, which should be well drained, and only a thin layer of *Osmunda-fibre* employed as a rooting medium. They are very subject to attacks of white scale insects which should be diligently sought after, as they increase very rapidly.

Laelia anceps.—This Orchid in its many varieties, is rapidly sending up its flower spikes, and plants should be supplied with water at the roots each time they become dry. Where a representative collection of *L. anceps* varieties are grown, the flowering period extends over a long time. The dark forms are usually the first to bloom, followed by the many beautiful white varieties. The spikes should be tied to neat stakes, and the plants thoroughly cleansed from scale insects.

Laelia autumnalis and L. albida.—These are other useful winter flowering species. The plants should be well supplied with water at the roots, afforded all the light available, and given free ventilation whenever the outside conditions are favourable.

Lycaste.—*Lycaste Skinneri*, *L. cruenta*, *L. Deppei* and others of this type are completing their season's growth and forming a quantity of fresh roots. They still require a somewhat liberal supply of water at the roots until the new pseudo-bulbs are fully developed, after which the quantity of moisture should be reduced gradually. These Orchids thrive well in a cool house, but it is advisable to keep the immediate surroundings rather drier than hitherto and avoid wetting the foliage. Expose them to all the light available.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Michaelmas Daisies.—These flowers have made a wonderful display this season, and many of the later varieties are still in beauty. The moist weather has suited them admirably, and growth has been so rampant that they have reached an undesirable height, making staking a difficult problem. To keep these Asters in vigorous condition frequent division is advisable, as many of the varieties are so free-growing that the clumps soon exhaust themselves unless they receive frequent attention. Cuttings of choice varieties inserted now and wintered in a cold frame will make valuable plants for spring planting.

Clerodendron trichotomum.—This distinct, Japanese shrub, of vigorous growth and handsome appearance is especially valuable because of its autumn-flowering qualities. The flowers, which are borne in loose terminal panicles, are white, but each flower, protruding from a

large, inflated calyx of a reddish-purple colour, imparts a conspicuous appearance. Its season of flowering is September and October, and it has seldom been so beautiful as in the past season. Its bold, dark green leaves make it an attractive summer subject, while for autumn tints it is particularly showy when fading to reddish-brown, orange and crimson. Unripened tips sometimes get cut by the frost in severe winters, but the plant speedily recovers, is quite a safe subject on well-drained soils in the southern counties and should be more widely planted.

Plantation Trees.—In the laying out of a new estate, large or small, one of the first considerations is the planting of belts of trees as shelter screens, or to enclose the property, and the rate of growth of the trees chosen is of great importance. Even with naturally fast-growing trees, however, the greatest asset for quick results is the thorough preparation of the ground, and for boundary belts, the whole area should be trenched to a depth of two feet. While the fastest-growing trees are usually deciduous the value of *Thuja gigantea*, *T. Lobbii*, *Cupressus Lawsoniana*, *Picea excelsa*, *Abies pectinata*, *Pinus Strobus* and *Pseudotsuga Douglasii* on suitable soils should not be overlooked. For immediate effect they may be planted fairly closely at first, removing every other plant so soon as growth and development is rapid, and this is most important, for more plantations are probably spoiled from neglect to do this than from all other causes. Amongst fast-growing deciduous trees, some of the Acers, notably *A. campestre*, *A. dasycarpum* and *A. macrophyllum* are useful. On suitable soils the Sweet Chestnut makes rapid growth and is, moreover, an attractive subject. *Tilia dasystyla* and *T. platyphylla* are also fast-growing and handsome trees. On moist soils the Willows and Poplars have no rivals for rapid growth. *Salix coerulea*, a species of Willow of upright habit under favourable conditions will grow from thirty five to forty feet in ten years.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Ripening of Bulbous and Tuberous-Rooted Plants.—Established bulbs of *Amaryllis* (*Hippeastrum*), even those which were started into growth during late spring, should have completed their growth and will no longer require water pending their long rest through the winter. If not already done, the pots should be lifted from the plunging beds and be placed where the bulbs will be fully exposed to light and all available sunshine. The houses now occupied by the bulbs should be kept dry, airy and cool. The same treatment should be given tuberous-rooted *Begonias*, *Achimenes* and *Gloxinias*, the growth of which has died down. For convenience and the saving of space all of these last mentioned may later be stored under the plant stages in cool houses, placing the pots on their sides in a position where the tubers will not be exposed to drip. *Caladiums* may be treated likewise, but these bulbs should be wintered in a warm house.

Plants for Forcing.—To meet the requirements of the establishment the necessary quantities of *Spiraeas* of the japonica type should now be procured. They should be potted very firmly, leaving plenty of room in the pots, when the operation is completed, for water, as these plants are thirsty subjects when in growth.

Shrubs for Forcing.—Stocks of Lilac (*Syringa*), *Prunus*, *Forsythia*, *Wistaria*, *Spiraeas*, etc., grown for forcing purposes, should be examined, and if it is required to supplement their numbers the plants should be ordered forthwith. *Azalea mollis* for forcing should also be procured so soon as possible. Most of the plants mentioned are procurable in early November, and those needing it, should, if possible, be potted immediately they are received from the nursery. The plants should be placed outside afterwards, plunging the pots to the rims in ashes, fibre or

other protecting material to save the breaking of the pots by sharp frosts.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Root Pruning.—This important operation should be undertaken in the case of trees that are growing much too strongly and not making fruiting spurs. If half of a tree is root-pruned this season, the other half may be pruned next year or later still, if the first operation proves very effective. Presuming the trees are large specimens, if a half-circular trench is dug, two feet wide and two feet six inches deep, or three feet if necessary, the soil may be forked from the roots until the one half of the roots are bare, and the pruning undertaken. Care should be taken not to damage the fibrous roots more than is unavoidable. When the roots are exposed tie them together with soft fillis or raffia, and place them out of the way of the fork. When the soil is cleared away the roots should be examined. Shorten the strong ones to within two feet of the stem, making a clean cut from the underside. All small and fibrous roots may have the points taken off, and others that are damaged, trimmed. Large roots that are growing down into the subsoil should be cut away entirely unless they can be brought level with the surface. If the soil is of a heavy texture mix opening material with it as advised in a previous calendar. In filling in the soil ram it very firmly, especially that in the bottom of the hole. As the latter is filled in arrange the roots in layers until the upper ones are within four inches of the surface.

Planting Apple Trees.—In planting a new orchard of young Apple trees the habit of the varieties should be taken into consideration. Some sorts grow upright and others have a spreading habit. Such sorts as Lane's Prince Albert, Bramley's Seedling, Newton Wonder, Gascoyne's Scarlet, Peasgood's Nonesuch, Royal Jubilee, Hambling's Seedling, Norfolk Beauty, Tower of Glammis, Loddington, Rev. W. Wilks, Cox's Orange Pippin, Margil, Blenheim Pippin, Coronation, and others having a spreading habit may be planted as bushes fifteen feet apart. Warner's King, Lord Derby, The Queen, Bismarck, Hormead Pearmain, St. Edmund's Pippin, New Hawthornden, Rival, Charles Ross, Barnack Beauty, Lord Hindlip and Crawley Beauty may be planted twelve feet apart. The following sorts are upright growing, and may be planted nine feet apart:—Egremont Russet, King of the Pippins, Sandringham, Edward VII, and Court Pendu Plat. For standards, choose Bramley's Seedling, Newton Wonder, Blenheim Pippin, Mère de Ménage, Dumelow's Seedling (Wellington), and Herefordshire Beaufin, setting these thirty feet apart. Lord Derby, Lane's Prince Albert, Annie Elizabeth, Golden Noble, Lady Henniker, Lord Grosvenor, Potts's Seedling, The Queen, Worcester Pearmain, King of the Pippins, Cox's Orange Pippin and American Mother may be grown as standards twenty-five feet apart.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley, Bury, Broxbourne, Herts.

Cleansing and Pruning Orchard House Trees.—So soon as the foliage has fallen, all trees should be thoroughly overhauled both for cleansing and pruning. In the case of trained trees prune them carefully according to their varieties, removing all badly placed shoots, and shortening the growths to a well-placed basal bud. If the trees have been allowed to develop long spurs it will be found advisable to gradually remove these entirely, cutting out a few, according to the state of the tree, each season. Endeavour to have all fruiting buds close to the main stems. When entire branches are removed with the aid of a pruning saw, carefully pare the rough edges of the bark to ensure a clean, smooth surface. This applies in all cases of pruning. At this season always cut to an outward eye or bud. If the trees are badly

infested with insect pests such as American blight, scale or thrip, it is best to go over the trees with a soft brush and strong paraffin emulsion; this should be well-worked into the bark and all cracks and crevices of the tree. Should the trees be free from insect pests and suffering from mossy growths and lichens, application of an alkali wash will quickly kill the growth; and cause the bark to assume a bright, clean appearance. Collect and burn all prunings, etc., and sweep off the loose soil of the border; then proceed to thoroughly wash all woodwork and glass, and go over all ironwork with a paraffin rag. Lime wash the walls, adding a handful of sulphur to the wash before using it. Carefully loop up the branches of the trees preparatory to training etc., as time and conditions allow.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Broad Beans.—In many gardens the practice of sowing a few rows of Broad Beans during the next week or two is to be recommended, especially where early summer vegetables are looked for. Plant the seeds in double lines six inches apart in the rows, allowing a space of two-and-a-half feet between the rows. Choose one or two well-tried varieties of the Longpod type. If it is possible to sow in a sheltered position this should be done, as the keen winds experienced during March very often do much harm to the plants and greatly check the crop. The plants will come into bearing a week or two in advance of any sowings that may be made in the open in the spring, however early, and the probability is that the crop will be cleared off before any sign of the troublesome black fly has made its appearance.

Stored Vegetables.—There will be many opportunities during wet weather to examine all root vegetables that are in store. Look over the Potatoes that are stored in sheds, and pick out all tubers that are not likely to keep. Tubers required for use as seed sets should be selected and placed aside to be set up in trays in a light shed, free from frost, leaving this operation to be done in future bad weather. Onions that are stored loose, and also those roped in bunches, should be examined. Those lying loose will benefit by being moved occasionally. Remove any specimens that are not likely to keep or that are damaged in any way, and give the remainder as much room as possible. Beets and Carrots stored in sheds should be protected from attacks of rats and mice, as these vermin find their way into sheds at the first approach of cold weather. Those stored outside in clamps should be afforded protection from heavy rains, covering them with spare lights, sheets of corrugated iron, or, failing either of these, a thick layer of straw. Turnips have recently been clamped and will only require protection from heavy rains. Artichokes and Parsnips that have been lifted to keep up supplies for a week or two, in case of sharp frosts, will not suffer much in an ordinary clamp in the open.

Ventilation of Frames.—Great care must be exercised as to how and when to ventilate frames. Very cold and damp, foggy days may be expected soon, and these will have a damaging effect on the foliage and growth of all vegetables and salads in frames. There will be an occasional few hours of sunshine, and advantage should then be taken to give suitable ventilation, removing the lights entirely for a few hours. This will help the foliage to dry, and if the soil is stirred with the Dutch hoe, the occupants of the frames will be kept healthy.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Olearias.—These attractive shrubs are well worth experimenting with in many of our bleakest northern gardens, and if the situations and conditions generally are suitable will repay for their inclusion. *O. Haastii*, the best known and certainly the hardiest species, thrives in

most districts. It is a charming evergreen shrub with small, leathery foliage and is a beautiful object in early autumn when covered with dense masses of the Daisy-like flowers. This species will thrive in partial shade. *O. nummulariaefolia* is another hardy species. *O. nitida* lends itself for growing on walls, the large trusses of flowers showing to great advantage against the flat surface. Olearias thrive in almost any soil; they are easily transplanted, and suffer little or no check when moved. In all cases it is of the greatest importance that the soil in which Olearias are planted should be drained perfectly. Low temperatures do not seem to harm these shrubs in the same degree when grown in open soils as when planted in badly drained ground.

Gladioli.—The latest flowering varieties of these plants should now be lifted and suspended in a cool shed until the foliage is well-ripened, when the corns may be detached from the stem and stored.

ALPINE GARDEN.

LEWISIA REDIVIVA.

The genus *Lewisia*, which contains some very beautiful and interesting plants, is wholly confined to the western part of North America, being found at various altitudes on the mountain ranges in that region. One of the first species to be introduced into cultivation in this country is the plant here illustrated (Fig. 146). It is a native of the Rocky Mountain region and grows in the sandy soil of dry prairies alongside the river courses. The long, fleshy roots are possessed of remarkable vitality, as after being pressed and dried for herbarium purposes they have been known to start growing again and produce flowers freely. The botanist Pursh described the species from material that had been dried for several years and he afterwards planted the roots, which grew for a year, hence the name *rediviva*.



FIG. 146.—LEWISIA REDIVIVA.

Hardy Lilioms.—When cutting down flowering stems of *L. auratum*, *L. Henryi*, *L. tigrinum* and any others included in this section, it is wise to place some covering over the clumps as a protection against frost. The material used should not be of a close nature; straw pegged down affords an excellent protection, or, better still if available, dried Bracken may be used.

Trenching and Digging.—As the crops are cleared in the kitchen garden proceed with trenching and digging the soil. Too much cannot be said in favour of early digging. If turned over early, the soil is greatly ameliorated by the action of frost, rain and snow. When trenching soil to a depth of two or three spits, unless the sub-soil is of very good quality, do not bring it to the surface, rather improve it where it lies by digging it over and adding manure to it. It is important that all soil trenched and dug now should be laid up with the spade in as rough a condition as possible. If ridges can be formed without beating the soil with the spade these are desirable, the main object being to obtain a rough, open surface.

The small, terete, fleshy leaves are produced in rosettes close to the ground. In spring the large, handsome flowers are produced, several on each plant. These are of a beautiful soft rose colour, and when fully expanded are from two-and-a-half inches to three inches across. While not so easy to grow in the open as some of the other kinds, *L. rediviva* does well when grown in pots in a cold frame, potted in very sandy loam.

When growing actively the plants require plenty of water but while at rest they should be kept on the dry side. There is an excellent illustration of *L. rediviva* in *Bot. Mag.* t. 5396.

Another good *Lewisia* is the beautiful *L. Cotyledon* with rosettes of broad, fleshy leaves and large flowers, the petals of which are rosy purple with a broad white margin. It, and *L. Howellii*, with crinkled, narrower leaves, may be naturalised in moist, gravelly soil, as young seedlings come up freely round about old plants that have flowered and produced seeds that are allowed to fall on the ground. *W. I.*

BULB GARDEN.

LESSER-GROWN BULBOUS PLANTS.

(Continued from p. 326.)

COLCHICUM.

THE members of this Liliaceous genus are mostly autumn flowering and their large, Crocus-like flowers, resembling a carpet in the grass in September and October, produce a spurious spring-like effect which is all the more fascinating because of its contrast with autumn features. It is stated that it was the spring-like look of this autumn flower which inspired the legend that their first appearance was due to Medea spilling some drops of the magic liquid she had prepared to restore Jason to the vigour of youth. No doubt also it is due to the fact that the flower comes in the autumn and the seed pods follow in the spring that gave them the old name of "Sonne-before-the-father."

C. speciosum and its varieties bear remarkably handsome flowers of good substance and should be grown everywhere, but *C. autumnale* and its varieties are equally serviceable, while *C. byzantinum*, a profuse flowerer, and *C. cilicium* with delicate pink flowers, are of great merit.

AUTUMN CROCUSES.

THE difference between Colchicums and autumn-flowering Crocuses is a botanical one, which, in regard to decorative effect, need not be considered, their claims in this direction being similar in every respect. The two genera, however, give the plants a wider choice of material in carrying out colour schemes to produce spring-like effects in autumn on a wide scale. For a distant effect the Colchicums are more showy, while from the close view the Crocuses are probably more refined and beautiful. It may also be mentioned that the leaves of the Colchicum are rather large and coarse, while those of the Crocus are fine, and with a knowledge of this the planter is not likely to grow the Colchicum in a position where coarse leaves might be unsightly during the early summer months.

Amongst the best Crocuses are *C. ochroleucus*, bearing creamy-white flowers with bright orange base; *C. speciosus*, very handsome and showy, with prettily veined, violet-blue flowers, orange-red anthers and yellow throat; and *C. zonatus*, with rosy-lilac flowers with orange and yellow base.

Both these genera are of the highest value for mass planting in grass, and their cultivation is of the simplest kind. Those growers who have given up planting the spring-flowering Crocuses owing to the impossibility of retaining colour effects because of the depredations of sparrows which take the petals to line their nests, should try these autumn-flowering subjects. It is a most important point in cultivation that they should be planted as early as procurable.

ERANTHIS.

THE Winter Aconite, *E. hyemalis*, is frequently in flower soon after Christmas, and remains in beauty over a very long period. Its golden blossoms, resting on emerald green cushions of leaves create a charming effect, and if associated with Snowdrops and early Scillas their effect is enhanced. Under trees and in positions where few other plants will thrive, the *Eranthis* grows luxuriantly, and long after the flowers have passed, its bright foliage clothes the ground in dense tufts.

E. cilicica is a comparatively new and distinct species with larger flowers and finely-cut foliage which takes on a pleasing bronze tint.

ERYTHRONIUM.

IN recent years many useful additions have been made to this genus, and it is difficult to imagine a prettier sight than a mass of Dog's Tooth Violets with their attractive, variegated foliage and Cyclamen-like flowers. The varieties of *E. dens-canis* are old favourites, and are well adapted for the edges of borders and shrubberies or for naturalising, while for surrounding the stepping stones in the rock-

garden they are ideal. They all prefer a moist and partially-shaded position.

For choice positions in the rock-garden some of the handsome American species and varieties are of outstanding merit. *E. californicum* is a beautiful species bearing numerous flowers of a delicate, primrose-yellow colour, with orange markings in the centre, on strong stems. The variety *White Beauty* is equally beautiful, with large, white flowers of good substance and richly-mottled foliage. *A. giganteum* is a charming species bearing creamy-white flowers with golden central ring. *A. revolutum* and its varieties are amongst the most beautiful of the Dog's Tooth Violets, as the flowers have gracefully-reflexed petals, and the foliage is usually mottled with brown.

IXIA.

THESE bulbs are not usually considered hardy, but on light, well-drained soils and in positions sheltered from cold winds they succeed out-of-doors. A covering of light, dry, protecting material during severe weather in early spring is helpful, but it should be removed before growth becomes too advanced. There is quite a large number of varieties and a wide range of colours, almost every shade of blue, yellow, scarlet and crimson being represented.

MUSCARI.

THE bright-coloured species and varieties of Muscari are of the greatest value, and no spring garden can be considered complete without them, while being of very easy culture, they prove satisfactory under almost all conditions. The variety *Heavenly Blue* is probably the most popular of all, and few plants could be more useful. Its freely-produced spikes are well furnished with little, globular bells of the richest shade of Gentian blue, and they remain effective from March until May. The flowers are delightfully fragrant and useful for cutting, having long stems, and the quality of remaining fresh in water for a long time. Naturalised on rock-work or grassy-banks, its bright colouring makes it an outstandingly attractive subject.

M. botryoides *coeruleum*, the Italian Grape Hyacinth, is a lovely species with pretty little spikes of dark blue, bell-shaped flowers, while *M. azureum*, a very early flowering species; *M. conicum*, a rich celestial blue, and *M. plumosum*, with feathery plumes of rich violet flowers, are all worth growing.

ORNITHOGALUM.

WHILE the members of this genus are not particularly showy they provide our gardens with several subjects which are quite useful for the rockery, the border and in grass, while some of the species will thrive in dense shade where few other plants would grow. *O. arabicum* bears handsome, fragrant, white flowers with glistening black base and yellow anthers in early June. *O. nutans* is much prized for cutting and its silvery-grey colour, shaded with pale, sea-green outside makes it easy to blend with other flowers. The giant of the genus, *O. pyramidalis*, has spikes of snowy-white flowers which frequently reach a height of three feet. It is useful for massing in the herbaceous border and may be used with excellent effect for planting amongst *Andromedas* and similar shrubs. *O. umbellatum* bears elegant umbels of pure white, starry flowers, very effective in masses and edgings and it will thrive in dense shade.

PUSCHKINIA.

THIS is a genus of Liliaceous plants closely allied to the Squills and valuable for their early-flowering qualities. Given a sunny position and a light, rich soil they flourish and constitute one of the brightest gems in the bulb garden in the month of April. There are several kinds in cultivation, but they are probably all forms of *P. scilloides*. *W. Auton*.

(To be continued).

IRIS GARDEN.

TWELVE CHOICE BEARDED IRISES.

IT is somewhat difficult to select the most prominent or conspicuous of border Irises as the varieties are so very numerous. These plants owe their popularity not only to the intrinsic beauty and variety of the flowers, but also to their hardiness and adaptability to almost any kind of soil or situation. They grow best in a free, well-drained, loamy soil in a sunny position, and need plenty of room. All that is necessary after planting is to use the hoe freely to keep down weeds. The varieties mentioned below are all very beautiful, of robust growth and free-flowering. The spikes, when cut for house decoration, are extremely effective. *Abenda* is one of the most useful of these Irises for all purposes, either for cutting for house decoration or grouping in beds or borders. The spikes are three-and-a-half feet tall, well-branched, and bear medium-sized flowers. The standards are prettily incurved, coloured old rose, shot with bronze; the graceful, drooping falls are madder crimson with a bronze flush. *Belladonna* is a variety with a distinct Black Currant perfume. The plant is of good constitution and remains in bloom over a long period. The medium-sized flowers are a delightful shade of self-China-blue, and are produced on stems three-and-a-half feet tall.

Deucalion produces showy blooms on very stout stems, four feet tall. The well-balanced, large flowers are a pretty combination of colour: the standards are apricot suffused with rose, while the falls are a rich crimson bronze with a conspicuous grey Picotee edge.

Eden Philpotts is a most delightfully-scented dark lavender-blue self, with a conspicuous white and yellow beard. The large, drooping flowers are well-balanced on stout stems four feet tall, and are very showy.

George Yeld is a variety of robust habit with flowers of perfect form. The standards are a bright apricot suffused and shaded rose, while the falls are a bright rose crimson, conspicuously edged with buff. This Iris grows three-and-a-half feet tall.

Lady Charles Allom is unique as a decorative variety. The prettily incurved standards are broad and of a rich blue; the falls are a few tones darker, and rendered more conspicuous by having a clear yellow beard. The flower spikes grow three-and-a-half feet high.

Lady Sackville has stout, rigid flower stems three feet tall, bearing well-formed flowers of immense size. The standards are large and broad, and the colour a translucent shade of soft, silvery blue that contrasts well with the dark violet purple falls.

Lord Lambourne is notable for its vigour and stately habit, its freedom of blooming and lasting qualities of the blooms. The large, handsome flowers are produced on well-branched stems, three-and-a-half feet tall. The standards are rosy-fawn shot with bronze; the falls are madder crimson well set off by a conspicuous white-lined base and a yellow beard. In refinement, delicacy of colour, size and form the variety *Marjorie Tinley* is undoubtedly the most glorious of the pallida section. The flowers are borne on well-branched stems, four to five feet tall. The standards are soft, lavender-blue and prettily incurved. The falls are deep mauve.

Mrs. H. F. Bowles is unequalled for stateliness and majesty. The flowers are borne on stout stems, three-and-a-half feet tall. The standards are a shade of chocolate-brown, overlaid with old gold. The falls are chestnut-red with a velvety sheen and a conspicuous white-lined base.

Olive Murrell is a sweet-scented Iris of great beauty, having a combination of beautiful colours. The standards are prettily arched, coloured lavender-rose, shot with bronze. The falls are rich lavender-blue, shot with rose and bronze.

Ruby Perry is a magnificent pallida with self-coloured dark rose flowers. The plant is wonderfully free-flowering and of good, erect habit. It grows four feet tall. *W. Logan*.

KEW NOTES.

AUTUMN colour of the foliage and fruits continue to attract attention among the trees and shrubs. Mention was made recently of two trees of the American Tupelo, *Nyssa sylvatica*, growing within a few yards of each other, one with brilliant red leaves, the second still a rich green. The leaves of the first have fallen while the second tree is now a gorgeous golden-yellow from top to bottom, and is a beautiful, pyramidal, lawn tree.

Rhus trichocarpa is a shrub which never fails at Kew to provide beautiful autumn colouring. The pinnate leaves develop a rich, orange-scarlet colouring. It is a native of Japan, apparently slow in growth under cultivation, though in the forests of Yezo the tree grows twenty-five feet in height.

Among the newer Chinese Maples, *Acer griseum* is a most valuable addition. The trifoliate leaves give the tree a distinct and ornamental character in summer, and now the leaves are turning from green to bronzy orange and red. The name of Red Maple, given to *Acer rubrum* and to its flowers, is a misnomer; at present a large tree with rich yellow leaves gives a most beautiful colour effect in the autumn sunlight.

The Barberries as a family are not fruiting well, but there are individual exceptions of outstanding merit. A form of *Berberis orthobotrys*, growing here as a rounded bush four feet high and five feet through, is gorgeously adorned with red fruits.

One of the parents of many hybrid Barberries, *B. polyantha*, has imparted a free-fruited quality to its progeny. As seen here, this Chinese species is one of the best half-dozen Barberries with drooping panicles of coral-red fruits, with sometimes one hundred or more fruits in a single panicle. *B. aggregata*, of which *B. brevipaniculata* is a synonym, is of a distinct upright and spreading habit, with flowers and terra-cotta red fruits produced in more or less erect panicles towards the ends of the shoots. The plant grown in nurseries as *B. Pratii* is now placed by Schneider as a variety of *B. aggregata*, and differs from the type in the minutely downy, young shoots and pale green leaves. Both are conspicuously free-fruited.

B. dictyophylla var. *albicaulis* is most attractive with the glaucous white bloom on the young shoots and undersides of the leaves. It is a free-growing and wide-spreading deciduous bush.

Now that the leaves are falling the glossy-scarlet berries are revealed in profusion on the twigs of *Ilex* (*Prinos*) *verticillata*. A shrub up to eight feet or more in height, with spreading branches, the American Winterberry is an attractive, deciduous Holly for the shrubbery border.

For warm walls and sheltered gardens *Escallonia montevidensis* (Fig. 147) is a useful autumn-flowering evergreen. A bush ten feet high, growing in one of the sheltered recesses of the Temperate House, has been in flower for some time. The white flowers, borne in large terminal inflorescences, are very showy. This plant is also cultivated under the name of *E. floribunda*, an unfortunate name for a species, because it is a favourite descriptive name which can be, and is sometimes, given in nurseries to a free-flowering variety of any plant. *E. montevidensis* is found over a fairly wide area in South America, both native specimens and cultivated plants showing considerable variation, particularly in the size of the leaves. It is doubtful if the true *E. floribunda*, Kunth, is in cultivation, being a native of a warmer region in Colombia, Ecuador, etc. The plant figured in the *Bot. Mag.*, t. 6404, is not *E. floribunda*, but one of the forms of *E. montevidensis*. One of the important botanical characters in grouping the Escallonias is the length of the style, which places these two species at once in different sections. *E. floribunda* has a style about the length of the calyx lobes; in *E. montevidensis* the style is at least twice as long as the calyx lobes, protruding much beyond the corolla tube. Another important characteristic is that in *E. montevidensis* the calyx-lobes are longer, and conspicuously glandular. A. Osborn, Kew.

NOTES FROM A WELSH GARDEN.

ALWAYS the latest of the Heaths in this garden, *Erica stricta*, has been very charming for several weeks past and, given a continuance of open weather, it will maintain its display of rosy-pink blossoms for another month at least. Whether it is grouped with others of its genus or used as an ornamental hedge, or bold edging, this Corsican species is always delightful. There is a marked distinctiveness in its foliage which always attracts attention, especially in winter when its gentle verdure affords such a telling setting for the fox-red of the withered blooms.

Erica ciliaris hybrida has flowered here for the first time. This is a very choice variety of dwarf and compact habit with unusually large flowers in a bright rose-purple. Commencing in early July, this newcomer is still (early

geous blossoms, many of the smaller *Hypericum*s have broken into flower, and *Oxalis enneaphylla* is in full bloom, as are *Geranium lancastriense* and *G. Farrer's Pink*. Some of the *Iberises* are snow-white; *Rosa Roulettii* has quite a cluster of its tiny, perfectly-formed Roses; *Sedum compressum* is a blaze of big golden stars; *Daphne Cneorum* is a good deal more rosy than one likes to see it in October; many border Campanulas are flowering again, and most of the dwarf *Kniphofias* which were checked by the drought are bearing sheaves of bloom.

But if the present time is notable for these pleasant but perhaps unwise resurrections, it has also had the effect of bringing into flower many subjects whose true season is winter or early spring. We have, for example, the unusual spectacle of *Lithospermum rosmarinifolium*, its wonderful Gertian blue gleaming in striking contrast to the fiery orange-scarlets of *Diplacus glutinosus*. *Daphne Dauphinii*,

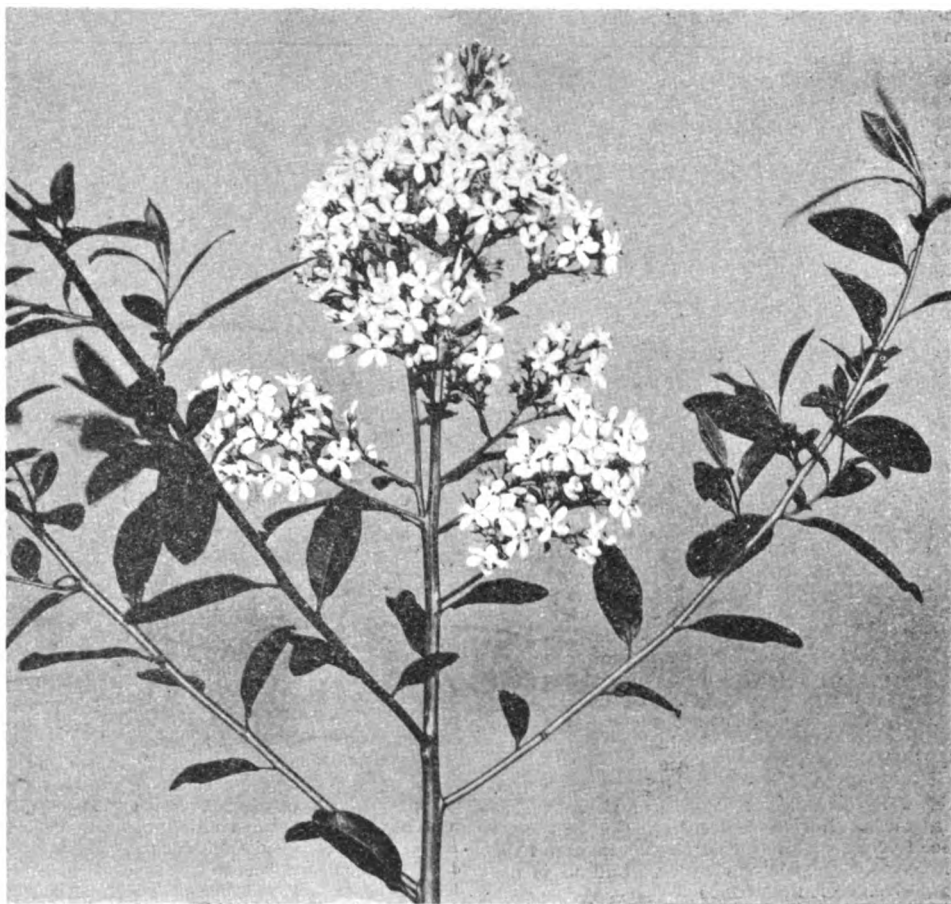


FIG. 147.—ESCALLONIA MONTEVIDENSIS.

October) quite gay, and it promises to be a decided acquisition. Presuming it to be a *ciliaris* × *Tetralix*, it looks as though this novelty were destined to eclipse other well known hybrids of similar origin. *E. vagans*, var. *Mrs. D. F. Maxwell*, which so richly deserved the Award of Merit bestowed on it at the last Holland Park Show, is also a Heath of singular beauty and distinction. It does not, I think, rival *E. v.* var. *St. Keverne*, for whilst the latter is a strong rose-pink, the flowers of the former borne in immense spikes, are a much softer shade, tending rather to a warm-toned cerise. There is no suggestion of blue or purple in either of these excellent varieties.

A hot and dry June and July brings as its natural sequel a kind of second spring in autumn. Thus, although much of the garden was uncommonly dull in August and part of September, the present month has restored to it some of the gaiety of May. Rock garden Violas have seldom been so full of flower at this season, the *Mimulus* are bearing a second crop of their gor-

normally in bloom from January onwards, is covered with its fragrant, mauve purple clusters; *Coronilla glauca*, which is quite hardy here, has not been better in April than it is to-day, and, if it does not receive a timely check, *Genista fragrans* will soon be bearing enough blossom to court inevitable disaster in a sharp November frost. Yet in spite of the stimulating influences which have brought these and other things into flower, that interesting shrub, *Vitex Agnus-Castus*, which had promised a display of bloom this month, shed all its buds in the wet and chilly weather of early September.

Fuchsias have never been better than they are to-day, and if I discern the signs of the times aught, there seems to be a revival in the culture of these old-time favourites, which is all to the good, for they are shrubs not only of singular attractiveness, but invaluable assets to the late-summer and autumn garden. The prostrate, trailing *F. procumbens*, which appears to be quite hardy, is attractive in foliage, flower and

fruit. No less can be said of the elegant and dwarf *F. microphylla*, *F. pumila* and *F. Cottinghamii*, so admirable in the rock garden, and we always have with these a plant or two of the charming *F. recurva*, though it is not hardly enough to remain out all winter. *F. Riccartonii*, *F. macrostemma*, and some of the larger varieties or hybrids of the latter, do very well in the part shade of our deciduous woodland trees, and if the colour of their abundant blossoms is perhaps a trifle hard, it does not blend unkindly with the prevailing hues of the season. The old pink and white Rose of Castile is a bedding or border *Fuchsia* of much distinction and merit.

Kirengeshoma palmata, having been removed from the woodland to moister conditions and better soil, has done remarkably well. Though its first crop of shoots was pinched by a spring frost, the plant has made a clump a yard across, every growth being laden with its loose sprays of ivory-yellow flowers. Some of the Willow Gentians (*Claslepiadea*) are still giving pleasing bunches of blue under similar conditions as the above, the pale azure variety, Perry's Blue being exceptionally charming. A form of *G. Pneumonanthe* bearing one bloom (very rarely two) on each stem is also here, and the dainty luminous blue flowers of *Campanula* (*Wahlenbergia*) *hederacea* are still dappling the shining green foliage of that delightful little native.

One of the most interesting plants in a mixed border is *Linum viscosum*. Few would, at first glance, take this interesting plant with its upright spikes and sticky nature to be a Flax. But it appears to be as uncommon as it is curious, and, unlike most of its kind, it is not fond of too much sun. In the specimen referred to the flowers are a soft lavender-blue which, I take it, is considered a "good form," inasmuch as the colour of the more usual type tends rather to a mauve.

Helianthemum alyssoides has for many years been the best of the yellow-flowered species grown in this garden, for it is not only extremely prolific in flowering, but it is always the first to give colour in spring, yet it flowers nearly all summer and breaks into renewed splendour in autumn. Further, the large, unspotted blooms are a richer yellow than those of any other of the genus I am acquainted with, the plant keeps a close, compact shape, not getting lanky or dying-off in parts, as some of its nearest allies are apt to do, and the ample foliage is a fresh green softened by a silvery down.

Whilst there is every prospect of an unusually brilliant display of autumn colour, this is not yet so much in evidence as is customary at the present date. The fruit of *Cotoneaster bullata* is remarkably striking, the clusters being large while the individual fruits are as big as small cherries, and of a gleaming crimson. Few, if any, of the genus can boast of such splendour and, taking into consideration the fact that these fruits are among the first to ripen and the last to go, one wonders why *C. bullata* is not more often seen in gardens.

Euonymus europaeus atropurpureus has, at the moment, the most gorgeous array of leaf colour, the foliage, which is very persistent, being a vivid blood-crimson. *Vitis vinifera* var. *purpurea* might rival the above, but this vine needs to be grown on a trellis or pergola so that the rays of the low afternoon sun may strike through its purple leaves and fire them with that splendour which even the Spindle can seldom boast. *A. T. Johnson, Ro-Wen, Talycafn, N. Wales.*

ORCHID NOTES AND GLEANINGS.

CATTELEYA BICOLOR COERULEA.

SINCE the introduction of *Cattleya bicolor* by Messrs. Loddiges of Hackney in 1838, from Brazil, many small importations of it have been made, and some variation in colour has been noted. The sepals and petals of the three-inch to four-inch wide flowers are usually shades of green with an olive-brown tinge and occasional spotting, while the lip varies from crimson-purple to rose, occasionally with a white margin in front.

The blue-lipped form, *C. bicolor coerulea*, which is very rare, is flowering with Messrs. Stuart Low and Co., at their Jarvisbrook nurseries, the plant having been in their possession for many years. The variety *Grossii* with rosy-crimson lip, has also flowered in several places. It is one of Messrs. Low's introductions, and was by some considered to be a distinct species. When recording the Award of Merit in *Gard. Chron.*, September 27, 1902, mention is made of the probability of its being a natural hybrid of *C. bicolor* and *C. elongata*, but subsequent flowering favoured its retention as *C. bicolor Grossii*. *J. O'B.*

PUBLIC PARKS AND GARDENS.

THE Hendon Urban District Council has received sanction from the Ministry of Health to borrow £31,500 for the purchase of land at Cricklewood for a recreation ground, housing and allotments.

MR. J. G. GRAVES, of Sheffield, has presented Sheffield Corporation with an estate of 154 acres adjoining Norton Hall, on the fringe of the city, for use as a public park.

EALING TOWN COUNCIL has decided to apply to the Ministry of Health for sanction to a loan of £16,000 for the purchase of 12 acres of land north of Cleveland Road, Harrow-on-the-Hill, for a pleasure ground.

THE Town Council of Haverfordwest has decided to apply for a Provisional Order authorising the compulsory purchase of land for a recreation ground. The expenditure involved is estimated at £3,000.

A SELECTION OF ASIATIC WILLOWS.

(Concluded from p. 292.)

Or the section *Heterochromae*, *S. heterochroma* from western Hupeh and eastern Szechuan was brought to the Arnold Arboretum by Wilson in 1909. It is also known as *S. Henryi* which had been placed by Burkill in the Section *Hastatae*, while von Seemen, the author of *S. heterochroma*, first believed that it might belong to section *Tetraspermae*, the shape of the ventral gland being similar to that of the species of this last section. In my opinion, *S. heterochroma*, together with *S. isochroma*, and *S. omeiensis*, form a distinct group differing from sections *Phylicifoliae* and *Hastatae* in the longer catkins, and in this respect resembling the section *Eriostachyae*. *S. heterochroma* is a handsome species with entire, lanceolate leaves which are whitish underneath. According to Wilson, it sometimes becomes a tall tree up to 15 m. in height, while in mountain thickets it is only a rather low shrub.

Among the species of section *Phylicifoliae* there seems to be none of distinct horticultural value. Whether the true *S. phylicifolia* really does occur in eastern Asia is still doubtful. The forms hitherto referred to this species need further investigation. Of the *Hastatae*, a group very closely related to the foregoing, such species as *S. vulpina* and *S. japonica* are already in cultivation. Both are very variable, and I doubt if they are of more than passing interest. A more valuable alpine species seems to be *S. Nakamuraana* (*S. cyclophylla*, von Seemen, not of Rydberg) from Hokkaido and Hondo. Its habit is apparently similar to that of *S. arctica*. This species belongs to the next section *Ovalifoliae* (*Diplodictyae*) of which *S. arctica* and *S. angulorum* were mentioned when I dealt with the American Willows. Most of the species of this group are still imperfectly known, and all these forms should be cultivated for further observation. In western Szechuan, Wilson, in 1904, found a peculiar species, *S. oreinoma*, at an altitude of

4,000 m. in the mountains south-west of Tachien-lu. It is a small shrub with prostrate branches, and it ought to be looked for again.

Two small alpine species which in my opinion would be of great value to any large rock garden have been united by me in the section *Berberifoliae*, *S. berberifolia* from north-eastern Asia and *S. flabellaris* from north-western India. This section differs from section *Myrsinites* especially in the bi-glandular male flowers, and from the *Herbaceae* in its longer many-flowered catkins and more distinct styles.

Another group of handsome high alpine Willows is formed by those of section *Lindleyanae*. *S. Lindleyana* is a Himalayan species, and *S. oreophila* and *S. calyculata*, too, come from Sikkim. All these Willows are small, creeping shrubs, and *S. oreophila* var. *secta* resembles the European *S. serpyllifolia*. Of *S. calyculata*, Hooker states that it is a very small, gnarled, shrub, with ascending branchlets. There seem to be certain forms in Yunnan very much like *S. calyculata*. The most interesting Chinese species of this group is, however, *S. Souliei*, from western Szechuan, where Soulié found it near Tachien-lu in 1894. Wilson, who collected it later, did not send plants home. Near Mupin, the Abbé David, in 1869, collected another very similar species, *S. microphyta*.

A peculiar high alpine species from Sikkim is *S. Serpyllum* which in its mode of growing and its leaves reminds one of *Thymus Serpyllum*. Of the two species *S. opsimantha* and *S. floccosa* from western Szechuan and Yunnan which I provisionally (but I am almost sure wrongly) placed in the section *Glaucæ*, I failed to find the last on the Li-kiang range when I was there. I do not know whether or not Mr. Forrest introduced it, but I hope we shall soon get material of this small shrub which grows on exposed calcareous cliffs at an altitude from 10,000 to 12,500 feet. It does not belong to the *Viminalis* as Burkill believed, and it resembles some species of section *Eriostachyae*.

The next section is *Capreae*, of which *S. Caprea* is to be found from the Ussuri region to central Japan. It may be that the forms of eastern Asia are somewhat different from the European ones, but they are certainly of no greater horticultural merit. There is, however, a species in western China which apparently is identical with *S. Wallichiana* from north-eastern India. It has been sent to the Arnold Arboretum by Wilson in 1907, where it has proved almost hardy. It has been written of rather enthusiastically in vol. LXXVII, p. 269, of the *Gard. Chron.*

It would be interesting to introduce from Japan the eastern representative of the Section *Daphnoides*, *S. rorida* (*S. acutifolia* or *S. daphnoides* of some authors), but the differences are apparently very slight.

Of section *Viminalis* there are, besides the eastern forms of *S. viminalis*, several other species in Japan and China. One from western China, *S. Rehderiana*, was introduced by Wilson in 1908. It forms tall bushes or small trees, and proved to be quite hardy in the Arnold Arboretum. Judging by the young plants I have seen, its horticultural value is less than that of our common Osier.

Under the name *S. mutabilis*, a handsome Japanese Willow, *S. gracilistyla* (*S. Thunbergiana*) has been in cultivation for about thirty years. It represents a distinct section, *Gracilistylae*, and has been united by von Seemen with *S. Pierotii* in his section *Subviminalis*. I think, however, that *S. Pierotii* is best placed with the *Purpureae* from which *S. gracilistyla* differs widely in its long, thin styles (hence the name), in the long narrow gland and in the narrow acute bracts. *S. gracilistyla* looks rather nice with its thick male catkins appearing in March on the naked branches, the flowers possessing one filament only with two purplish anthers. The many-veined leaves also form a rather characteristic feature.

Among the section *Helix* (*Purpureae*) there are quite a number of Japanese and Chinese species of a certain horticultural value. I have already mentioned *S. Pierotii*, known in our gardens for more than twenty-five years as *S. japonica*. It is a good species, easily

distinguished from *S. purpurea* by its somewhat larger and broader, long acuminate leaves, and from *S. Miyabeana* by its denser serration and shorter and thinner aments. Of the Chinese species *S. cheilophila* ought to be introduced. With *S. Wilhelmsiana* (*S. angustifolia*, Willdenow) from the Caucasus to Kashmir, and *S. microstachya* from western Siberia it forms a separate group in the section *Helix*. All these species are rather distinct in the narrowness of their leaves.

Another peculiar group of species that flower in summer or, according to special conditions, in December and January, is formed in this section by *S. Bockii* and the species allied to it. *S. Bockii* I have frequently met with in north western Yunnan. Wilson introduced it from western Szechuan by means of cuttings in 1908. He states that it grows from 1 to 3 m. tall, and often covers large areas. I never

TREES AND SHRUBS.

DWARF SPINDLE TREES.

ONE of the prettiest of the smaller members of the genus *Euonymus* is *E. nanus*, a narrow-leaved, semi-deciduous native of China and eastern Europe. This is a delightful rock garden shrub, of bushy, compact habit, not more than a foot or so in height, and with dark, glossy-green, Rosemary-like foliage that provides a pleasing setting for the ripe fruits, whose four lobes of bright pink disclose, on opening, the orange-coated seeds within. This summer, *E. nanus* has borne fruits with unusual freedom, doubtless owing to the abundance of sunshine. There is a form of this Spindle Tree known as *E. n. Koopmann's* variety, which is rather larger in the leaf, and it is said to fruit with more certainty than the type.

shrub of the greatest charm. Its small, rounded leaves, dark green and veined with a lighter shade, are warted with tiny excrescences common to many members of this genus, and the slender stems which bear them are entirely prostrate. But eventually the latter grow together and form a dense mat several inches high, or they will clamber about adjacent rocks or into the foliage of neighbouring plants as if they appreciated such support.

I have found the very distinctive species, *E. alatus*, such a slow grower that it might well be classed among the dwarfier kinds. This is a deciduous shrub, said to attain a height of six feet or more, and easily distinguished by the four curious, corky wings which develop on the bark of the older branches. *E. alatus* is a shrub which should be included in all selections chosen for autumnal colouring of the foliage, for the leaves turn a vivid scarlet. The

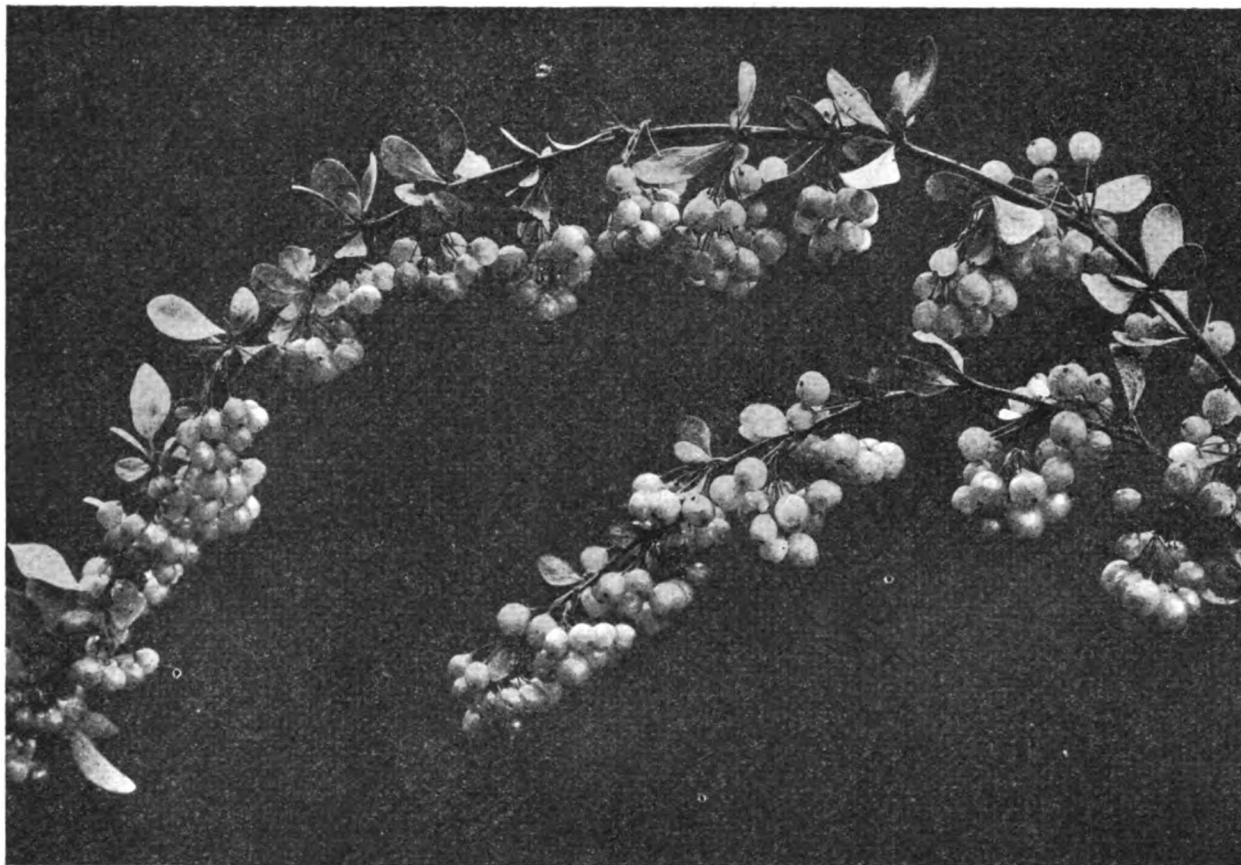


FIG. 148. BERBERIS JAMESIANA.

R.H.S. Award of Merit, October 20. Stems red; fruits scarlet, shaded with vermillion. Shown from the R.H.S. Gardens, Wisley. (see p. 337).

saw plants higher than 1 m. It flowers in the month of August or later in the fall, and is quite an ornamental flowering shrub at a time of the year when we are surprised to see a Willow in flower. It is hardy in central Europe, at least more hardy than *S. Duclouxii* from Yunnan-fu would be, which is most closely related. Another species, *S. variegata* (*S. densifoliata*), flowers from October to January. It is, according to Wilson, a pretty, low-growing and creeping Willow, abundant on the rocks and on the sandy foreshores of the Yangtze river in western Hupeh and eastern Szechuan. During the summer floods this plant is submerged for weeks together, but in the winter it is very conspicuous with its vivid green leaves, the plants forming broad mats of verdure.

From the foregoing, it will be gathered that there are many Willows of eastern Asia well worth cultivation in our gardens. Most of the Chinese species should be introduced, as many of them are of greater ornamental value than our well-known European species. *Camillo Schneider*.

Another species which is effective just now is *E. obovatus*. This is an eastern North American plant, and a useful shrub for planting as an undergrowth in woodland where the soil is moist. In some places and seasons *E. obovatus* does not make much show of colour, but when there is a good crop of fruits, these, with their crimson lobes and scarlet seeds, suspended from the slender arching branches, the shrub is a decided acquisition. The broad, sharply-pointed leaves, moreover, often take on bright autumnal tints before they fall, and the fruits may remain on the branches nearly all the winter.

The Japanese *E. radicans*, in one or other of its decorative varieties with variegated, evergreen foliage, is well enough known. It does not often seem to fruit in this country when grown in the open, but specimens trained against walls not infrequently carry a crop of the pinky white fruits with golden-yellow seeds.

E. kewensis (*minimus*), introduced by Professor Sargent, is believed to be a form of the above, but it is singularly distinct, and a rock garden

habit of this Japanese species is stiff and upright. *J.*

CORIARIA JAPONICA.

This shrub is not so well-known or so frequently met with as it deserves to be. It is a most desirable subject for the front of shrub beds or borders, and, being of a prostrate habit, it is most adaptable as a rock garden plant. It is distinct in habit from its companion variety *C. terminalis* in that it flowers on the entire length of its shoots, the blooms somewhat resembling those of *Euonymus europaeus*.

The berries, which at first are reddish-brown ultimately turn black. When well-established this plant grows freely, and is very attractive during the later part of June and during July. Propagation may be effected either by cuttings or layers.

The plant is a native of Japan and was introduced in 1893. It will succeed in the neighbourhood of London, but does best in the warmer districts of the south-west. *W. H. Hones*.

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THE GARDEN IN ANTIQUITY.

XIV.—SACRED PLANTS OF THE HINDUS.

IT is probably correct to state that the altars and temples are an index to the horticultural attainments of a race and age. Where fruits and flowers abounded they would be employed by the devout to adorn the sanctuary and gratify the deity. And as these would become the perquisites of the priests, who often had little or nothing but the gifts of the people for their honoraria, it would be to their interests to see that the best of the produce of the earth was presented to the gods. They would naturally represent that the bruised and blighted, the speckled and decayed, were unsuited to the altar, and thus a new impetus was given to the culture of suitable plants. Many things tended to decide which flowers or fruits would be acceptable. Fragrant flowers, herbs and woods were selected, both in their fresh state and in their dried condition, because their perfume, the aroma of burning aromatics, and the smoke of incense deadened the smells arising from sacrifices and insanitary conditions. Fruits and grains of the choicest kinds would be presented because the people believed, either that the gods literally partook of their gifts and fed on their offerings, or at least that the spiritual essence of the material things reached them, and would be acceptable in proportion to their rarity, their value or their perfect condition. Hence religion has played an important part in the development of the gardener's art, and the skill of the horticulturist and pomologist. "Shall I offer unto the Lord that which has cost me nothing?" is the question of the devout in all ages, and in India especially we find that sacred plants are extremely numerous and beautiful. It must suffice to name a few of these, and give a passing glance at the more instructive details.

To begin with sacred fruits, I visited, many years ago, a Hindu temple on a feast day, and was amazed at the number of Bananas which were offered at the shrine. The priest took the bunch, broke it in two, returned half to the worshipper, and laid the others on the altar. Though the Banana is indigenous it has long been under cultivation in India, and has a number of native names. The number of varieties in the south of Asia is immense, and as De Candolle remarks, "the cultivation of these varieties dates from an epoch impossible to realize." The fruit has for many ages been an important food, and we in England can form but a poor idea of the fragrance and attractiveness of the Banana in the East. Humboldt reminds us that it took the place in some lands of the grains or cereals of others; and because it was of such

value to the people it was acceptable to their gods. The plant-lore of the Banana would fill many pages, and cannot therefore be entered upon here. It must suffice to note that among its names we find Kadala, and several ending in phala, fruit, as, e.g., Chanu-phala, from chanu, a ray of light, because the fruits seem to be luminous; Rajeshta, the desire of kings (from raja), and Vana-lakshmi, forest beauty.

We might expect many forms of fruit belonging to the genus Citrus to occur among the sacred plants of India, but this is not the case. Hooker in his fascinating *Himalayan Journal* reminds us that as the climate of India generally is marked by "one season of excessive humidity, and the other of excessive drought, it can never be favourable to the production either of good European or tropical fruits. Hence there is not one of the latter peculiar to the country, and perhaps but one which arrives at full perfection, namely, the Mango." A peculiar Citron grows in the East whose fruit terminates like a hand, with fingers raised as if in benediction. This is known as Buddha's Hand or Buddha's Fingers, and is used for giving a grateful perfume to the domestic apartments, and at religious festivals. Its association with Buddha is interesting, but it does not seem to be a sacred fruit in India, although one species (*Citrus Medica*) is said by some to be the original of the cultivated Citron, and is found wild here and there on the western Ghats.

Turning, however, to the Mango, we find much of interest. This is the tree which the magician has long delighted to produce for the astonishment of the people. The apparent production of the tree with flower and fruit is so cleverly performed that even the most critical observers, who have been bent on discovering the secret of the illusion, have had to admit that they have been baffled. So delicious a fruit—though some Europeans never acquire a taste for it—long since received a Sanskrit name, which has, under various modifications, found its way into other tongues. This name, *amra*, has passed into Persian and Arabic as *amb*, and among the modern names in use in India the same form occurs. It grows all over India, where it is probably indigenous, and is often adorned with one of the most beautiful of Orchids, those epiphytes which

Drink the bright shower, and feed upon the air.

The Pomegranate, which is wild in Afghanistan and elsewhere is known in India as Anar, or Dalimb. This latter name is said to be from the Sanskrit *darimba*, whence De Candolle concludes that the species had long been known in the regions traversed by the early Aryans in their route towards India. This is, as De Gubernatis expresses it, the *arbre rotique et phallique par excellence*, and plays its part in the folk-lore and religion of all eastern lands.

The Cucumber is said to have been cultivated in India for at least 3,000 years. It is undoubtedly a native, its original habitat being the north-west of India. Hooker found it wild from Kumaon to Sikkim, the specimens differing little from the cultivated forms. Among the modern names are Khira and Kakri, but these are not allied to the older name *sukusa*, the etymology of which seems to be doubtful.

There are many different species of Ficus in India, but the scientific culture of the fruit has not been hitherto a matter of interest. The Sanskrit name *uhumbara* is applied to the glomerous Fig tree (*Ficus glomerata*); a large tree with fruit like that of the cultivated Fig, only small, red and downy, growing in clusters on the trunk or branches. The famous Fig trees of India, however, are, as Milton remarks: "not the sort for fruit renowned," yet the Banyan trees, by some old writers named the Brahmin Fig, and the Pipal or Popul tree (*F. religiosa*) are world-famed. The latter is known in Sanskrit as the *Ashvat* or *Arvattha*, and is spoken of as the sacred Bo-tree of Buddha. Specimens are said to have attained the age of 2,000 years and upwards. It is stated that the famous Peepul of Anarajapura had reached the age of 2,147 in A.D. 1852. It would therefore now be 2,220 years old.

As stated above, however, India has not been famous for her fruits. It is rather to her trees, herbs and flowers, her grains and grasses, that we must look for sacred plants; and here we are embarrassed by our riches. There is first the famous Amrita or herb of immortality, which yielded the divine nectar, the beverage of the gods; and provided a medicine which prolonged life, prevented old age, and even raised the dead! Seated under the shade of the five trees which grow in Indra's garden, or Paradise, the gods indulge in the luxury of drinking the Amrita. But when we try to ascertain the name of the plant whence the nectar comes our difficulties are great and many. Is it a Euphorbia, a genus of plants which yield much milky juice; is it a Panicum or a Pandanus, a species of Saccharum or a Phaseolus, a Mangifera or an Emblica? If this choice is not wide enough we have a Terminalia or an Ocimum, a Piper, a Cucumis or a Cocculus, to name no others. All this, especially when we find that each plant has its ancient Sanskrit denominator, shows that the garden had been largely cultivated for sacred purposes. To understand this we must study the wonderful story of the Soma, about which early Hindu literature has much to say. This is one of the most sacred plants of India, and during the past forty years I have made vast accumulations of information respecting it. But whether the Soma or Moon Plant is to be known scientifically as a Cynanchum, an Asclepias or a Sarcostemma is perhaps still an open question. We learn from one good authority that the plant at present in use by the priests is not the same as the Soma of the Vedas, but in any case the order Asclepiadeae seems to have to-day, as it had formerly, the honour of supplying the sacred herb. According to Professor Kuhn the Amrita and the Soma are one and the same.

Next to this we must place the Holy Basil (*Ocimum sanctum*), first introduced into this country in 1768, and, as the trivial name implies, held to be sacred. "Holy Basil or Tulasi is by the Hindus regarded as a most sacred herb, and they have given one of its names to a sacred grove of their Parnassus. This holy herb is grown in pots near every temple and dwelling of devout Hindus." Our own name for the plant, Basil, is from the Greek *basilikon*, meaning royal, and we may infer from this that it has long been held in high esteem. Almost equally renowned is the sacred Kusa grass (*Poa cynosuroides*) often called the Sacrificial Grass, and sometimes written, Kutha. It is mentioned in Kalidasa's drama entitled "Sakuntala," from which quotations were made in an earlier chapter:—

Holy flames, whose frequent food
Is the consecrated wood,
And for whose encircling bed
Sacred Kusa grass is spread;
Hear, oh hear me when I pray
Purify my child this day.

The trees, herbs and flowers of the Hindu deities were numberless. If the Pipal (*Ficus religiosa*) held first rank as the tree of the gods, others also partook of that honour. Much might be written respecting the Indian Cedar (*Cedrus Deodara*) and the Alstonia, the reeds and grasses, the herbs and medicinal plants thus consecrated, but we must draw to a close. The variable Hibiscus (*H. mutabilis*), the Medick (*Medicago esculenta*), the Bauhinia (*B. purpurea*) and many other plants here find a place, and each has a name linking it with the devas or gods. And here one would fain linger to recall the associations which existed between the flowers and such popular divinities as Kama, the god of love, who in the place of arrows shot flowers. Kalidasa calls the Hindu Cupid *kusumayudha*—he whose arms are flowers, these flower-arrows having the same effect upon lovers as have the moon-beams.

This brief and imperfect survey of an inexhaustible subject shows that the love of the garden and its produce was warmly cherished by the early Hindus, and gives us at least a passing glimpse at the plants they cultivated, and some of the uses to which they applied them.

* Previous articles on "The Garden in Antiquity" by the Rev. Hilderic Friend appeared in our issues for February 7; February 21; March 12; April 11; April 25; May 30; June 20; July 25; August 8; August 22; September 12; September 26; and October 17, 1925.

ROSE GARDEN.

THE MACARTNEY ROSE.

ROSA BRACTEATA, frequently known as the Macartney Rose, is a species with a wide distribution through China, Formosa and Northern India. According to *Bot. Mag.*, t. 1377, its introduction is due to Lord Macartney, who brought it to this country in 1785 when returning from his embassy to China. Although fairly hardy, *R. bracteata* appreciates a warm position such as is afforded by a sunny corner in the angle of a wall, or by the side of a buttress, and under these favouring conditions its evergreen character makes it a useful plant. The large white flowers (Fig. 149) are effective, have a large central mass of golden stamens and are fragrant; beauty, fragrance and an evergreen character are three excellent qualities in a Rose. If allowed to grow unpruned the Macartney Rose will reach a height of from ten feet to fourteen feet, and a large specimen is a pleasing object when bearing its attractive flowers during the months of August and September. *B.*

ROSES ON GRAVES.

WHILST Roses are not generally employed for the decoration of graves, nothing is more beautiful than a single bush or perhaps two of a suitable variety, and a few types of the plant are quite suitable for the purpose. Of the ordinary bush Roses, the crimson-coloured varieties are effective, and if a selection is made of a compact, close-habited variety, such a bush will be quite in keeping with its surroundings. The crimson and dark red Roses are especially good for the purpose, and in an open situation, such as a grave presents, they will grow and flower with the greatest luxuriance. The bushes should be cut down somewhat severely each season, for nothing looks more out of place on a grave than an unshapely plant that seems to have suffered from neglect.

Another type that is very pleasing for the purpose is the dwarf Polyantha, and, if preferred, these Roses may be utilised as an edging, especially where the area of the grave permits of extensive planting. In graves of ordinary dimensions, one or two of these Polyantha Roses will flower practically the whole season through and late into the autumn. Another type that may be used is the weeping standard and a well-trained specimen of Albéric Barbier, almost evergreen, is one of the best for the purpose.

Some of the Musk Roses are also adapted for planting on graves, and these also have the great advantage of being continually in flower. The planter should not aim at producing a bizarre effect, but strive for simplicity, and this will be best achieved by using only one variety; in the case of the weeping standard, a single specimen throwing its branches as a canopy over the headstone, is all that is necessary.

The practice of planting Roses as memorials to the dead is by no means new, although not very extensively practised in this country. The beautiful lines:

"I sometimes think that never blows so red
The Rose as where some buried Cæsar bled;
That every Hyacinth the Garden wears
Dropt in its lap from some once lovely head."

are the words of one of the world's oldest poets. *T.*

POLYANTHA ROSES.

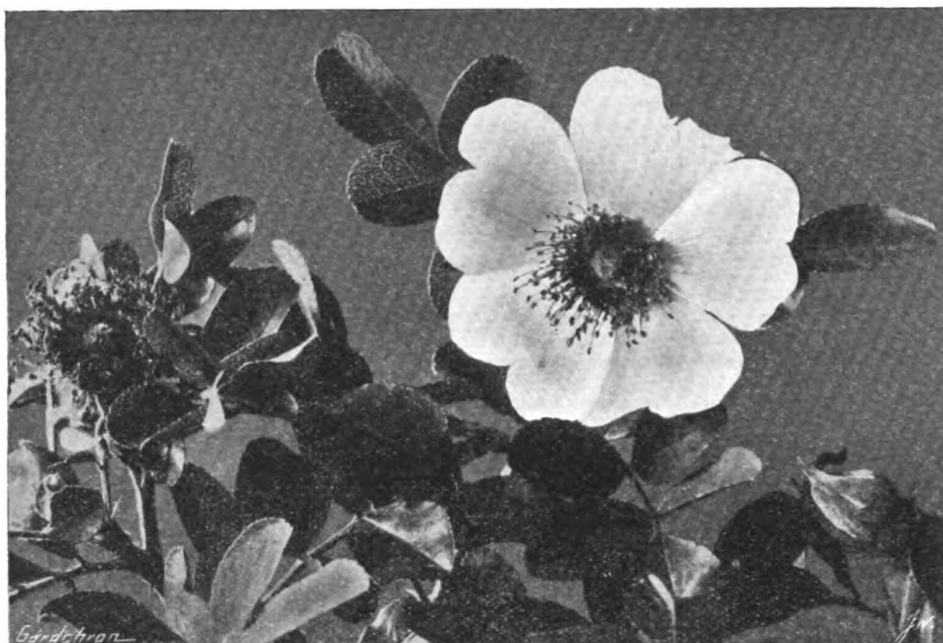
The garden Roses which form the subject of this article are more correctly known as Polyantha Pompons or dwarf Polyanthas; but the single designation is now generally used for these low-growing, ever-blooming, bush Roses, which bear small flowers in clusters. They have arisen from the crossing of forms of *Rosa multiflora*, a climbing species known in the past as the Polyantha Rose with varieties of *Rosa indica*, the China Rose. From the former parent the many-flowered cluster is obtained, and from the latter perpetual blooming and the dwarf habit. It is somewhat strange,

considering the parentage of these hybrid Polyanthas, that continuous blooming ramblers as well as dwarfs have not been forthcoming, though the same surprise may be expressed regarding the *Wichuraiana* crossings. A true perpetual in these types of ramblers (*multiflora* and *Wichuraiana*) has not yet materialised. A step in this direction, however, appears to have been achieved in the production of a quite recent variety, *Phyllis Bide*, described as a climbing Polyantha capable of reaching a height of six feet. More Roses of this character with the climbing habit accentuated would be welcome.

Polyantha Roses are becoming increasingly popular as bedding subjects on account of their perpetual habit and floriferousness. They are a rival to the *Pelargonium*. If planted permanently *in situ* the beds will be flowerless in the spring months. This drawback may be overcome by growing them in pots and plunging these in the beds after the spring occupiers (bulbs, Wallflowers, etc.) have finished their flowering, as carried out successfully in this way by Mr. R. Findlay in Greenwich Park (*Gard. Chron.*, Sept. 12, p. 206).

buds. Unfortunately, neither carry perfume. They are also impatient of wet and require sunny weather in order to bloom at all well.

Another couple of varieties, *Eugénie Lamesch* and *Léonie Lamesch*, may be considered together, as they not only bear the same surname but also blend well as regards colouring. They are fairly old Roses, dating from the close of last century. *Eugénie Lamesch* is quite dwarf, bearing pale yellow flowers that become pinkish as they fade. It is said to have some scent, but I have not detected it. *Léonie Lamesch* is an unique-looking Rose. Its peculiar crumpled buds open out into cup-shaped blooms of a bright coppery red with the centre often golden. The flowers exhale a strong perfume suggestive of Sweet Briar and Apples. It is a strong grower, so if the two are to be associated, *Eugénie* must be allotted the periphery of the bed or the front row of the border. *Léonie Lamesch* is distinctly the more appealing Rose. It is useful for vases, as the buds continue their unfolding in water. It is, unfortunately, only a fine weather Rose. The buds are apt to rot in the wet. In this respect *Eugénie Lamesch* behaves better.

FIG. 149.—*ROSA BRACTEATA*.

Polyantha Roses as a class have one conspicuous defect, viz., lack of perfume. Decidedly fragrant forms are quite exceptional. There is scope here for the hybridist. These Roses would be still more popular did they as a rule carry scent.

Having tested a number of Polyantha Roses in recent years it may be of interest to point out their merits and defects as shown when grown in the north-west of England. It is convenient to divide this class of garden Rose into two groups, viz., the varieties with few flowers in the cluster, and those with many flowers—the more numerous and typical division.

1.—CLUSTERS FEW-FLOWERED.—Two varieties dating from the early eighties, *Cécile Brunner* and *Perle d'Or*, are still grown, as they have not yet been surpassed as regards their chief feature of attraction. This resides in the perfect shape of their flower buds, whereas Polyanthas, as a whole, show little "form" in the individual flower. *Cécile Brunner* is of an attractive shade of pink, and *Perle d'Or* as the name suggests, is yellow in colour. The former is the stronger grower. They can hardly be recommended as bedders, but are rather to be grown for their exquisite miniature

Two other yellow-flowering Polyantha Roses have been tried—*Canarienvogel* and *Georges Elger*. The bloom of the former opens too flatly to be pleasing. The latter is an improvement, and by some considered to be the best yellow Polyantha to date. A recent introduction, *Orange King*, furnishes a new break in colour, otherwise its flowers are too few and tiny to be effective.

2.—CLUSTERS MANY-FLOWERED.—There is much choice here among the reds and pinks, but few to choose from as regards the whites, and the yellows are non-existent. *Anna Marie de Montravel* used to be the standard white, but it has been superseded by *Katherine Zeimet* and *Yvonne Rabier*. The latter, with its miniature, snowball-like flowers, is the more recent, and perhaps the more popular, but I prefer the former for this part of England, as it stands the wet much better and, besides, it is quite fragrant. *Yvonne Rabier* appears to be scentless.

Of the deep reds or crimsons, *Edith Cavell* (1919) is destined to take pride of place until ousted by one as good, but with perfume. It is a strong grower, very floriferous and rich in hue, being of a scarlet crimson, reminding

one of the colouring of Hugh Dickson at its best. It is true it "blues," but does so prettily. The edges only of the petals change, taking on a Plum shade. As regards this variety there is apt to be some confusion owing to another Rose, a hybrid tea, bearing the same name. In some catalogues this Polyantha is listed as Nurse Cavell, and I for one welcome the alteration. It not only avoids confusion, but is more appropriate for the war heroine. It is fortunate that a Rose named after her is likely to become well-known and much grown: for others deserving of remembrance in this way have not always had this luck, to wit, the great rosarian of the Victorian age, Dean Hole. The two Roses that have been named after him never became popular. The hybrid perpetual, a weakling, is no longer in cultivation, and the hybrid tea only appears occasionally in exhibition boxes.

The most widely-grown crimson Polyantha up to the present time has been Jessie. This variety bears a very bright cluster, each flower of which usually shows a speck of white. It is not such a tall grower as Nurse Cavell, and so more suitable for edging or small beds. I have grown this variety for some years only to find it disappointing. It is not so vigorous with me as I should like; but my cause of complaint is more serious than this. It has the provoking habit of not always expanding its flowers. The blooms reach the full bud stage showing colour and then cease developing further. They remain so for days, even weeks, and then turn brown and wither without any expansion whatever. Whole trusses may be so affected and even the entire bush. In fact, one such plant is now under observation. This is the second year it has been noticed to disappoint in this fashion. I thought, last year, the cold summer might be the cause, but this cannot be so, as the summer just past has been exceptionally warm. It will be interesting to see whether this plant will still be so obstinate when transferred to a pot and grown in a greenhouse. Jessie is very amenable to pot culture, and with me, gives most satisfaction grown in this way.

Two other crimson of medium growth are worthy of mention—Erna Teschendorff, and Triomphe d'Orléanaise. Neither is as bright as Jessie, but they are better growers and bloomers. Erna Teschendorff is addicted to developing mildew on its flower stalks and receptacles, and for this reason one is not favourably disposed towards it. It may have inherited this weakness from Crimson Rambler, one of its parents. Triomphe d'Orléanaise is therefore to be preferred, it has a somewhat larger flower. Eblouissant, another crimson of fairly recent date, I have not tried, but I am drawn to it as it is said to be fragrant.

Of the pinks and lighter shades of red there is a considerable selection. Until recently, the light crimson and very vigorous Orleans Rose held the premier place, but now its striking sport, Coral Cluster, may be deemed first favourite. This bud sport, unlike so many Roses, is appropriately named. Its colouring is of a soft coral pink—a shade which lends itself well for decorative effect in the house. In a bed at a distance Orleans itself makes a better though cruder splash of colour. Coral Cluster is just as vigorous as its parent. It is inclined to revert but such shoots can easily be removed. Nurse Cavell and Coral Cluster make a pleasing contrast whether mixed in bed or bowl. Mrs. W. H. Cutbush is a well-known satisfactory pink Polyantha. It is not quite so vigorous or so good a "doer" as Orleans, otherwise it is similar, only a little lighter in colour.

A variety of rather a different character is the cherry-pink Ellen Poulsen. It is of stiffer growth with larger flowers. On account of its rigid shoots, the flower cluster rarely droops—an advantage for beds. The individual bloom lasts wonderfully well for a Rose. It is slightly fragrant.

A Polyantha of some charm is Maman Turbat. Its colouring is distinctive, described as rose-shaded peach. It is of medium growth and an early flowerer. The time of blooming is not always taken sufficiently into account in

arranging a Rose garden. With me, Maman Turbat is finishing its first flowering while a late bloomer like Orleans is just commencing, Ellen Poulsen coming about midway.

Echo is a pink Polyantha of some popularity, which I have not tried. It is said to be a sport of the well-known multiflora climber, Tausendschön. Its origin appears somewhat strange for, being classed as a Polyantha Pompon, apparently it is a perpetual, though its parent is only a summer bloomer.

A Rose which is usually grouped with the Polyanthas, though of somewhat different character, is the cherry-red Rödhütte. It makes quite a bright patch of colour as its blooms are held erect and do not blue. The individual flower is only semi-double, but larger than the usual Polyantha. One might regard it as a satisfactory bedding Rose with nothing distinctive or especially attractive about it.

To sum up the Polyanthas, their chief merits consist in their continuous blooming habit, and thus their suitability for beds, their amenability to pot culture, and to some extent their value as cut flowers. Their defects, at present, are three-fold—lack of fragrance, want of form in the individual flower, and the need of a good, free-flowering yellow variety after the style, say, of Orleans. J. P. Carlisle.

FORESTRY.

FANCY WOODS: THEIR USES AND VALUE.

THE sale, recently, in Surrey, of a small parcel of Box wood, and in London of Laburnum and skewer wood, recalls the fact that quite a number of our less common trees produce timbers in small quantities that are of special value for certain definite purposes. Of late, quite a quantity, comparatively speaking, of Holly has been offered for disposal, as also Yew, Acacia, Cherry, Apple, and Pear, while a small lot of Elder wood, which was manufactured into toothpicks, was purchased by a London firm in the trade.

Not long ago Sir Herbert Maxwell exhibited in London golf-heads made of home-grown wood of *Cotoneaster frigida*, and in another case the value of Spindle Wood for special purposes was shown, as also baskets made of the roots of the Birch. Though in this country, timber of the Box rarely attains to large dimensions, nor is it, unless in a few instances, produced in sufficient bulk to be worth offering for sale, yet in some cases the reverse holds good, and recently twenty tons were sold in Ireland, and on Lord Gladstone's Dane End Estate a large quantity was offered a short time since. Though Boxhill, in Surrey, was at one time famous for the growth of Box wood, the sale in 1915 having realised over £10,000, yet larger and equally valuable timber of this kind, though in much smaller bulk, has been grown in other parts of the country. The wood, which is of a delicate cream colour, hard, dense and compact, with little or no pith, is extensively used in the making of mathematical instruments, foot rules, thermometers, scales, gauging rods, shuttles, dice, and at one time largely for engravers' blocks.

The timber of *Cotoneaster frigida*, as produced in this country, is remarkably tough and undentable, but is, so far, little known in the trade. The tree is particularly valuable for growing in smoky districts, and has attained to a height of over thirty feet in one of the London parks.

Laburnum is probably one of the hardest, weightiest and most beautiful of our native woods, being in mature trees of a rich brown colour towards the centre, and of a bright yellow outwards with lighter veining inwards. For fancy turnery bowls, blocks and pulleys it is sought after, also as a substitute for ebony. There is no special market for recognised standard prices for any of above, though small quantities of Box wood have been sold at prices which varied from £5 to £7 per ton. Much higher prices have been received when a considerable quantity of large sized trees were offered for sale. For a small number of Laburnum trees, 3½ per cubic foot was realised in Kent.

Rarely do we hear of Laurel timber being on offer, though two sales have taken place in Ireland, at which fair prices were obtained for stems up to three inches in diameter at the small end. Both lots were purchased for engineering works at Belfast, and in one case the price was at the rate of 35/- per ton. The wood is of a pleasing yellow colour, heavy, hard, and of good lasting properties. A short time since enquiries were made for wood of the Elder, which is used in the making of fancy boxes and largely for inlaying works. It is of a creamy-yellow colour, very compact and solid, works smoothly, and takes a good polish. The pithy centre, which is so conspicuous in young wood, entirely disappears in the mature timber.

Mulberry wood is sometimes obtainable, and the timber of trees grown in London has been very successfully used in the making of fancy cabinet work, being of a rich brown colour, with a distinct graining in various shades of brown and grey. It is neither apt to crack nor warp when seasoned; is a clean, smooth wood, and well-known for its lasting properties. There is no fixed price for Mulberry timber, uprooted trees being usually sold at an arranged value according to size and quality of the wood. For a single tree £5 was paid in the London suburbs.

Wood of the Spindle Tree (*Euonymus*) was a century ago, in great demand for the making of spindles and distaffs, and also for toothpicks, skewers, and knitting needles. It is particularly fine of grain and not readily broken owing to the length of fibre in the timber, which is of a uniform whitish grey colour with faint longitudinal markings. It is rarely offered for sale, though quite recently, a London firm advertised for a small quantity of the wood. Only one transaction in the sale of Spindle wood has come to my notice, and for which 15/- per hundredweight was paid. Both Apple and Pear wood are sought after, the price ranging according to size and cleanness of the stems, from 1/8 to fully 2/- per cubic foot. Recently, numbers of uprooted trees of the Apple were sold at an agreed price according to bulk. Both woods are extensively used in various trades, especially in the making of professional and scientific instruments, saw handles, mallets, planes, and in the manufacture of a great number of wooden articles. For saw handles, no wood approaches that of the Apple, which has a fine, close grain and will neither warp nor break quickly under the twisting and strain to which it is subjected in this and other tool handles. The rich, reddish colour of Apple wood, which takes a smooth polish, is sometimes substituted for briar in the making of smoking pipes.

Cherry wood is frequently made use of, both in cabinet work and house building. It resembles some kinds of Mahogany both in colour and texture, works well under the tools of the carpenter, and is of good lasting quality. Before the introduction of Mahogany, timber of both the Apple and Cherry was largely employed in the making of fancy articles for the household. Yew timber is fairly plentiful, and used principally in rustic works, such as for arbours, bridges, as also furniture and mathematical instruments. Many household articles are made of Yew, which is remarkable for its powers of endurance, and being of slow growth the annual layers of wood are closely packed, thus rendering the graining remarkably fine and susceptible of a smooth polish. It is of a pleasing reddish tinge with distinct markings of a lighter shade. Large, clean butts that may be cut into wide boarding have realised from 2/- upwards per cubic foot.

The wood of the Acacia is of a beautiful greenish-white colour, and has been used in this country for turnery purposes and in the making of wooden nails for gates and buildings. It is a wood of remarkable lasting properties when placed in contact with the soil. Seasoned Acacia timber, in logs and planks, is being sold at from 4/6 per cubic foot upwards. Timber of the White Beam, Maple, Plane, and some other home-grown kinds are also offered occasionally for sale in small quantities, but like the others above-mentioned, they cannot be included as trade timbers. A. D. Webster

NOTICES OF BOOKS.

Notes on the Cactaceae of Argentina.

CARLOS SPEGAZZINI, who has done so much towards the exploration of Argentina, has repeatedly published very interesting accounts of the Cactaceae of his region. His latest publication* contains notes on fifty-two species and a general index to all his notes on the Cactaceae.

The Andes and the extreme south of South America possess a goodly number of dwarf caespitose Cactaceae, similar in habit, but belonging to two genera or even two distinct tribes. Most of them form part of the genus *Opuntia*, of which they have been separated as a subgenus under the name of *Tephrocactus*. Their more or less rounded joints bear large areoles mostly with longer spines and always with brushes of smaller barbed spines, the glochids, which easily penetrate the skin and may become most troublesome. These glochids and the bony-winged seeds are characters of all the *Opuntiae*. The other similar dwarf and caespitose Cactaceae are less numerous in species, they lack the glochids and the bony-winged seeds. Their seeds are, on the contrary, those of the ordinary Cactaceae, and especially more like those of *Pereskia*. These plants form the genus *Maihuenia*, of which five species are known at present. The flowers of the *Maihuenia* are yellow or red, whilst those of *Tephrocactus* are usually yellow, or white, shading to pale rose colour. Many of these plants have been introduced and are found in most collections of Cactaceae, where they grow without much difficulty but are extremely shy to flower. It is, therefore, interesting to learn from Mr. Spegazzini that some of them are equally shy to flower in their native locality. Of *O. glomerata*, Spegazzini has seen the flowers but once, and plants cultivated by him in his garden at La Plata are said never to have produced a flower throughout the many years that he grew them. These dwarf Cactaceae are insufficiently known, and it would be interesting to see their ovules, seeds, and seedlings. Probably these plants are stunted descendants of larger relatives.

Spegazzini describes a new monotypic genus, *Maihueniopsis*, which, he states, is intermediate between *Maihuenia* and *Tephrocactus*. This strange little plant, *Maihueniopsis Molinoi* Speg., which grows in the province of Jujuy at an elevation of almost 11,000 feet, forms patches of ovate-globular joints or branches, as they are connected with a broad base and not as loosely attached as is usually the case in these little *Tephrocactus*. Each single joint bears a few deep-seated areoles, of which the lower ones possess the characteristic brushes of glochids, whilst the upper areoles only possess wool and rather long spines. The flower rises from the uppermost areole, with a short obconic, smooth ovary, a very short kind of a tube and yellow petals. Unfortunately nothing is said about the ovules or the seeds. This alone would give us a clear idea whether the plant is really an *Opuntiae*, as it seems likely to be the case. This new intermediate genus comes as a real surprise.

Besides this several new *Opuntias* of the *Tephrocactus* and *Platyopuntia* type are described. Of the genus *Cereus* a new species, *C. roseiflorus*, Speg., from the province of Misiones, is figured and described, also a new *Leocereus*, *L. paulensis*, Speg., from Southern Brazil. Of *Trichocereus pasacana* (Weber), Britton, and Rose, we learn that it is an entirely alpine species, growing from 3,000 to over 10,000 feet of elevation, whilst the large-flowered *Trichocereus Terscheckii* (Palm.), Britton, and Rose, never occurs higher than 3,000 feet.

Also to the genus *Lobivia* two new species are added, *L. hyalacantha*, Speg., from Catamarca, and *L. oreopepon*, Speg., from Mendoza. Both these species have the typical flowers, and clearly justify the genus of Drs. Britton

and Rose, which has but little to do with *Echinopsis*, under which it was included by the older writers.

The genus *Gymnocalycium* of Pfeiffer is treated at some length and attention is drawn to the characters of the flowers, their length, the length of the ovary, the tube, and chiefly to the insertion of the stamens and the form of the style, which so far have not been sufficiently recorded. This old and distinct genus, established by Pfeiffer in 1845, has been usually neglected until Britton and Rose took it up again, and now also F. Vaupel recognises

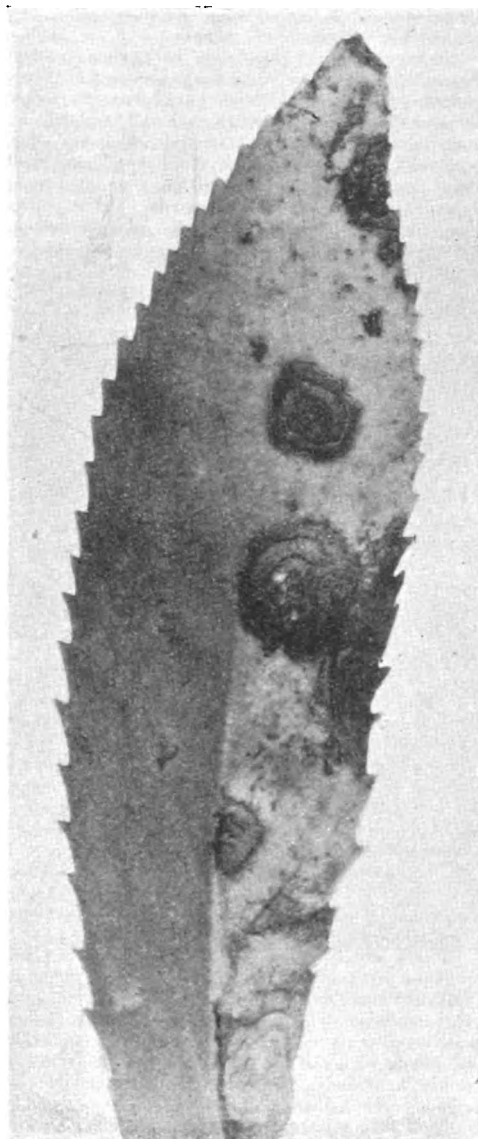


FIG. 150.—LEAF BLOTCH DISEASE OF THE SHASTA DAISY.

it. Spegazzini gives a key to seventeen species which he had an opportunity to study closely, and adds several new species. The genus extends, according to Spegazzini, from the extreme south, almost from the Straits of Magellan to northern Argentina.

These are in short, the most important items, but cactologists will find a large number of new data recorded.

Cacti.

THIS* is a new comprehensive monograph of the family of the Cactaceae, chiefly intended for the many amateurs of these plants in Germany and Central Europe. As the large, monumental monograph of Dr. Britton and Dr. Rose is too expensive and not within

reach of many, the new publication is sure to find a hearty welcome. It is written in clear language, free from foreign technical terms and the descriptions are clear and precise. The synonyms and literature are limited to the most necessary references, but good and reliable figures are quoted and much attention is given to the geographical distribution of the genera and species. The text is clearly printed on good paper, but the figures might be a little better and less stiff.

Since the last monograph by Karl Schumann, of which the second edition was published in 1903, the knowledge of this family of plants has made considerable progress. A comprehensive new synopsis for those unacquainted with the English language and who consequently cannot use Britton and Rose's work, is therefore much needed by the numerous lovers of these plants. The author does not seem, with a few exceptions, to take up any of the newly created genera, but clings to the old system of Salm-Schumann, whereas botanists in Argentina, England, Italy, United States, etc., adopt most of them, but how far the author will keep up his conservatism will only be revealed as the work progresses. The first fascicle contains only the genera *Pereskia*, *Maihuenia* and the beginning of *Rhipsalis*. The author, Dr. Friedrich Vaupel, of the Botanical Garden and Museum at Dahlem, Berlin, is President of the Deutsche Kakteen-gesellschaft, which at present embraces 1,400 members. Alvin Berger.

A LEAF BLOTCH OF THE SHASTA DAISY.

TOWARDS the end of August, in a garden at Bearsted, near Maidstone, the writer saw several plants of the Shasta Daisy (*Chrysanthemum maximum*) which were obviously in a most unhealthy condition. Many of the leaves showed large blotches of dead tissues and some leaves were withering. On examining the upper surface of these blotches with a pocket lens each was found to be studded with numerous dark dots suggesting the fructifications of a microscopic fungus. When the diseased parts were examined under a microscope the dots were found to be indeed spherical fungal fructifications which were embedded in the leaf. These fructifications when mounted in water set free numerous spores which issued through a pore, opening on the surface of the leaf. The spores were long and narrow, and the fungus was recognised as a species of *Septoria*.

On looking up literature on *Chrysanthemum* leaf-spots it was found that in 1908 Professor E. S. Salmon* recorded the occurrence in this country of *Septoria Chrysanthemella* on *Chrysanthemum indicum*, and it was at first thought that this might be the fungus occurring on the Shasta Daisy. It was seen, however, that the fungus on the latter had spores appreciably larger than those of *S. Chrysanthemella*. The spores of *S. Chrysanthemella* are described as 40 to 70 μ in length, while those of the fungus under examination were found to be frequently 100 μ or more in length.

Specimens were therefore sent to the Herbarium at Kew. Miss E. M. Wakefield, systematic mycologist there, identified the fungus as *Septoria Leucanthemi*, and stated that no previous record of this fungus in Britain could be found. Specimens were also submitted to Mr. W. B. Grove, of the University, Birmingham, another well-known systematic mycologist, who confirmed the identity of the fungus, and said that he had never met with it in this country.

The spots, or rather blotches, for when well developed they were often half to three-quarters of an inch in diameter, were more or less circular in general outline and showed distinct concentric zoning as shown in the illustration (Fig. 150). Several blotches sometimes coalesced, killing large areas of leaf surface, and some leaves were

* "Nuevas Notas Cactológicas." Publicado en los *Anales de la Sociedad Científica Argentina*. XCIX. Buenos Aires, 1925.

* *Die Kakteen: Monographie der Cactaceae*, von Dr. Friedrich Vaupel. Berlin. Fascicle No. 1. May 15, 1925.

* *Report on Economic Mycology*. 1908, pp. 70 to 82.

completely withered. There was no doubt that the disease was not only disfiguring the plants but it was also causing material damage by the destruction of the leaves.

Although it appears that this disease has not previously been reported for this country, it is probable that it occurs in localities other than the one here mentioned, and when the Shasta Daisy is showing disfigured leaves it should be examined for the symptoms of the disease here described. If anyone meeting with this disease would send specimens to the writer it would aid in ascertaining its distribution.

With regard to the control of this disease, it is suggested that propagation should be made only from healthy plants. Seriously diseased plants should be burnt, and healthy plants only should be used for raising new stocks. *H. Womald, Horticultural Research Station, East Malling, Kent.*

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

At one time a cultivator would have been bold to predict the wane, the fall really, of the florists' type of incurved Chrysanthemum, for this section provided the leading class at exhibitions for a very considerable period and it was rightly considered that to present the incurved varieties in the best exhibition style meant most exacting work. We still possess inward-turned florets in some of the Japanese varieties, but these are not so regularly incurved as in the true incurved varieties. As with the last-named so in the case of other once favoured formal types; all have been supplanted by the more or less ragged style of bloom.

The demand for improved early-flowering kinds is not so strong to-day as it is for late ones; those for November blooming, the natural time for Chrysanthemums, will always take care of themselves. Already this year a goodly number of early sorts have been noted as novelties, and probably all who have seen them will agree that *Crimson Circle* and *Mayford White* are real gains. Early Chrysanthemums that develop a type of growth producing the flowers in open branches or sprays are the most desired, and of these such novelties as *Cranford* and *Cranford Cream* represent the ideal plant.

Those who predicted that the limit in size of exhibition varieties had been reached did not anticipate such huge flowers as the Australian raised *Mr. T. W. Pockett*, or the home-produced *Gigantic*, two varieties of recent origin. Several sorts unknown to growers generally have been noted as being promising enough for me to predict that some outstanding sorts of both show and market Chrysanthemums will be forthcoming before the present Chrysanthemum season ends.

The Chrysanthemum calls for constant attention on the part of the cultivator. The plants must have a good root system and the roots must not be lost through the failure to supply water, or through the application of strong stimulants. Desire for high development calls for concentration of growth; and it becomes a question not of having so many flowers as a plant can produce but how few are desirable according to the purpose for which the blooms are required. It is common in these days for the grower of large exhibition Chrysanthemums to allow but a single specimen bloom to develop on each plant; still, there is no reason why more than one plant should not be placed in the same pot. For the market grower a dozen good blooms, or fewer, on a plant, are likely to be a better paying proposition than a multitude of less well developed blooms, although there is room for some in spray form.

In the past it was the usual practice of growers to allow each variety to assume its

natural habit of growth; at any rate the points of the shoots were not stopped. What manipulation of the points has done for other growers I would not venture to state; but in my own case many unsatisfactory results this season may be traced to "stopping." Some of my stopped varieties, for instance, are not over full of florets. There are cases where the timing of the flower bud may be done satisfactorily by stopping the shoots, but, may be, the better plan is to alter the usual time of rooting the cuttings and so produce early buds, that is, root the cuttings late and select the first bud that appears. Select suitable varieties to flower at particular periods, especially when other than exhibition blooms are wanted.

Growers should take note of their mistakes. Some blooms or plants are sure to be disappointing and many failures may be attributed to overfeeding and immature growth. So far as soil is concerned the Chrysanthemum does well in good maiden loam; other materials may be applied as the season advances, manures, liquid or otherwise. This plan has succeeded with me this season beyond my expectations. The Chrysanthemum is a plant of simple culture; it is only when the grower attempts to do it better than anybody else that troubles follow. There is but one thing the Chrysanthemum will not stand with impunity, that is, neglect—failure to keep it clean or inattention in watering. *H. S., Woking.*

HARDY FLOWER BORDER.

ARRANGEMENT OF THE PLANTS.

THE colour scheme of the hardy flower border should be carefully studied by planters. The ends of the border may contain white and pale blue flowers, leading on to pink, pale yellow, mauve and deep blue. As the centre of the border is approached a blaze of orange, yellow, scarlet and crimson should be provided, relieved by a few plants of neutral tint. This arrangement of colours when the plants are chosen with discrimination will be satisfactory if the border is large enough to contain a representative collection of plants. Groups of irregular shape should be formed.

The introduction of small flowering shrubs, especially evergreens, will often afford a pleasing foil, and *China Roses*, *Rosemary*, *Southernwood* and *Lavender* are suitable.

There are borders in certain positions which require brilliant flowers, and others in which brilliant tints would be out of harmony with the surroundings. Sometimes the garden is only visited during certain months, and this must be borne in mind by planters, and preparations made for securing the chief display at the particular season needed. The practice of forming "bays" with dwarf plants towards the back of the border is sometimes to be recommended. If adopted, this method needs careful consideration and should not be carried to extremes. A few tall, spires of flowers towards the front of the border will serve to obviate a too formal appearance and add to the charm of the border.

Certain plants thrive on hot, dry soils, others require a moist medium, and selections should be made to suit these extreme conditions where they exist. A deep, retentive loam is suitable for a large number of good hardy perennials.

The introduction of annuals or biennials of special colour may be desirable, but these flowers should be used with discretion. Pot-grown *Liliums*, *Hydrangeas*, *Salvias*, and other similar plants may be introduced to provide a continuance of bloom. These subjects are most useful when grown in reserve and arranged in the border as required. *Colin Ruse.*

FESTUCA GLAUCA.

This easily-grown grass is a very beautiful plant and a delightful feature of the border in summer. It is of compact, yet graceful

growth, and the foliage is of delightful glaucous colouring. The plant lends itself to some delightful combinations with other subjects, and is, perhaps, never better than when in close proximity to either pale blue or golden flowers.

A colony planted in full sunshine in well-drained soil, the latter not too rich, will provide a pretty feature, the greyish blue-green, surmounted by the white plumes being extremely graceful. *Ralph E. Arnold.*

SAXIFRAGA FORTUNEI.

THIS notable Chinese species is now (mid-October) just about at its best in spite of four to five degrees of frost when the buds were opening. Not only is *S. Fortunei* a valuable garden plant on account of its late blooming, it also makes a striking object in a semi-shaded place, especially where it has some dark green foliage behind it.

A member of the *Diptera* group, *S. Fortunei* makes short rhizomes from which arise in a bold clump the glossy-green, prettily-lobed, fleshy leaves which afford such a pleasing setting for the flowers. The latter, borne on stout, sappy, branching stems from this season well into November, are a good, clean white.

This plant appears to thrive in any good loam (enriched with leaf mould if necessary) where the drainage is free, but it evidently prefers a rather cool medium to one that is liable to dry out in summer. Though hardy enough, the blooms are liable to be injured by a sharp autumnal frost, or boisterous weather. That being so, select a site which provides a little protection against such eventualities. *J.*

FOREIGN CORRESPONDENCE.

EXCESSIVE PRODUCTION OF SUGAR IN PLANTS.

AN observation made here last summer may be of general interest to horticulturists, although I have not heard hitherto of such an event, nor can I find any reference to it in books on plant physiology (*Sachs*, translation by *Marshall Ward*, 1887, or *Molisk*).

About the middle of last July I found the upper surface of Oak leaves quite covered with sugar; they were bright to look at and quite sticky, and so much so that the garden seats below became very sticky. Lady visitors first called my attention to this phenomenon, because of this stickiness. The covering was quite sweet to the taste, and that it really was sugar was proved by the fact that bees eagerly collected it. A bee-master of my acquaintance told me that the occurrence was not an uncommon one, and he had seen even heavier coverings in previous years. I need hardly state that I made sure that there were no insects of any kind present to cause the stickiness.

Exudations of water on the edges of leaves, and of nectar from nectaries in flowers, are quite common, and not difficult to understand, but a thick covering of sugar on the upper surface of all the leaves of big Oak trees is quite another matter and not at all natural.

But why does this sugary covering occur now and then? Perhaps the reason may be found in the climatic conditions here at the time. We had a period of a month or rather more of high temperature (70° to 80° F.) day and night, and bright sun for rather more than seventeen hours a day. Such weather should give rise to an enormous production of starch and sugar in large, green leaves. A rather dry soil acted against the transmission of this abundance of sugar to other parts of the big trees; nevertheless, the leaves did not flag from lack of moisture. Was the sugar covering solely a protection? Was it a waste of energy—or both?

Eventually a light rain cleaned the Oak leaves of their sugary coating. *M. P. Andersen, Jonkoping, Sweden.*

NURSERY NOTES.

MESSRS. C. ENGELMANN, LTD.,
SAFFRON WALDEN.

I HAVE been "to see Engelmann," and should much like those readers of *The Gardeners' Chronicle* who have not been equally fortunate to see what I saw. If the visitor has a preconceived notion that Engelmann's is a nursery in the ordinary sense of the word such idea is dispelled, for it is nothing of the sort. A nursery, yes, and a remarkable one. Here we have plants grown by the hundred-thousand, and all phases of building work carried on by direct labour—enormous boilers are set, pipes are laid, acre-houses are fully constructed and made ready for the reception of scores of thousands of plants which proceed from the nursery stage to that of virile maturity, while fences are erected and foundations put down for roads that will carry heavy motor traffic. It is much more than an ordinary nursery, this vast Carnation manufactory, and I have not yet coined the one word that describes it adequately.

It is probable that one point will strike the practical Carnation grower on entering one of these handsome and gigantic structures, and that is their beautiful symmetry and lightness. All run east and west, and the beds in which the plants find accommodation which is most obviously congenial to them cross the longitude, and are, consequently, north and south. The glass is in comparatively large panes; it is exceptionally clear, and there does not appear to be a piece of constructional work that obscures a single ray of light that could be used for the benefit of the plants. One needs to see these points personally in order properly to appreciate them, but the illustration (Fig. 151) will be helpful. Some of the houses contain 60,000 to 100,000 plants.

For example, there are the propagating houses, in each of three of which 80,000 cuttings are accommodated annually, and it is abundantly clear that by the time these quarter-of-a-million little plants reach that state of desirable dignity when they are yielding many superb, successive flowers, they will require far more than the area they demand as cuttings. And these, let it be clearly understood, are not the only structures in which plants are propagated, and the total numbers run beyond the quarter-of-a-million already alluded to. Even more intense realisation of the trouble to which Mr. Engelmann goes to see that his collection is in what may be described as the perfection of good order, no matter from what point of view it may be closely inspected, is found in a vast house containing plants of not fewer than two-hundred-and-fifty distinct named varieties (frequently there are more than this) and five-hundred unnamed seedlings (this is a variable quantity each year, as must be well known to those who think what is now demanded from a "treasure," and how painfully easy it is to pick up "culls"). Many of them—one ought, perhaps, to say the vast majority—go in the first year, but those that show promise have their chance irrespective of cost, and this is not a small item that may find its way on the debit side of the account book. But it is imperative to at least that portion of Mr. Engelmann's immutable law which demands "Quality First".

It is impossible for it to be otherwise than for the visitor to Mr. Engelmann's to speculate mildly or the reverse according to his nature, as to where all these plants go ultimately. The moment their age of profitability is passed, the vast majority find final resting place on an adjacent rubbish heap, and the remainder, while young, go to small and large private gardens throughout the length and breadth of the British Islands, while others go farther afield. The glass at Saffron Walden covers nearly ten acres and supplies the greatest floral markets of the land with blossoms by the hundred dozen on the shortest demand, and private gardens with plants from

small to flowering size. At Saffron Walden scores of thousands of plants for this express purpose may be seen in the early days, becoming rapidly fewer as time wears on, and it will be conspicuously apparent that they are not the weakest examples on the place; on the contrary, they are, perhaps, the strongest.

Because *The Gardeners' Chronicle* claims readers from all phases of plant and flower growing it would obviously be a waste of space to attempt to give a selection of varieties—one group of private gardeners and amateurs might desire exhibition sorts exclusively; a second group from the same classes might aspire only to those of very distinct colours and the most consistent flowering habit; while a third group of market flower producers would demand only those varieties which are known as certain growers, certain flowerers, and certain sellers. All of these, and any others who may come along, can be accommodated by Mr. Engelmann at Saffron Walden.

HARDY FRUIT GARDEN.

GREASE BANDING AGAINST THE WINTER MOTH.

MUCH has been written on the above subject and gardeners generally are alive to the fact that grease banding pays, especially on standard or half standard fruit trees. From my observations two mistakes in grease banding are common. (1) The grease bands are often put on too early, and in consequence the bands become badly fouled with falling leaves and various insects and creatures which, at any rate from a fruit-grower's point of view, would be just as well alive. The falling leaves cause a good deal of trouble because, if not removed, they often serve as bridges over which the female winter moth readily climbs. I have seen winter moths ascend the trunk so far as the band, and on meeting the grease search around it for a way over. Gardeners who



FIG. 151.—PART OF ONE OF THE LARGE CARNATION HOUSES AT
MESSRS. C. ENGELMANN'S NURSERY, SAFFRON WALDEN.

It is clear that one list will not suffice, therefore the best advice the writer can give is to see Mr. Engelmann personally or state one's case clearly and succinctly (he is a busy man) in writing, and the best service will be forthcoming. W. T.

FRUIT REGISTER.

APPLE ST. CECILIA.

I HAD the pleasure recently of inspecting the stock of this new Apple in the nursery of the raiser, Mr. John Basham, of Basseleg. The habit of growth is one that takes the fruit-grower's eye and trees of appropriate age bear bright promise of future fruitfulness. Though the variety is not in full season until January the flavour, even now, is delicious. The fruit is of medium size, coloured crimson. The parentage of this variety is not known. St. Cecilia was awarded the Royal Horticultural Society's First-Class Certificate in 1919. *George H. Copley, N.D.H.*

practice grease-banding should make a careful record of the date on which they observe the first winter moths caught. If they did this for a few years they would soon be in a position to know within a day or so how long it is safe to delay grease-banding.

(2) Grease bands are often put too high up the stems of the trees. Naturally the bands must be high enough up to prevent them being fouled by rain-splashed soil; if placed higher than this there is a fair length of stem between the band and the ground level. Many female winter moths on reaching the grease turn back and deposit their eggs in the cracks of the bark below. Usually the grease keeps fresh long enough to trap the March Moth and the bands are then removed and burned. What of the eggs laid below! they hatch in due course and the grubs infest the foliage and trusses of flowers. From this it is obvious that the bands should not be placed higher on the stem than is absolutely essential, and in addition the grower should well limewash the portion of the stem between the band and the ground level. *Somerset.*

VEGETABLE GARDEN.

THE CABBAGE.

(Continued from p. 316).

It is somewhat singular that the earliest and the latest forms of the large Drumhead Cabbages should be strongly tinged with reddish-brown, a colour very objectionable in garden Cabbages. The Schweinfurt is the earliest very large variety, which, if sown at the end of March is fit for use at the beginning of September. The head is soft and loose, and should be used so soon as fit.

The late purple Flat Poll is the last to mature. It is very large, and hardy in the south-west of England where some very fine strains have been developed. Each plant needs at least a square yard of ground to bring it to perfection. Neither of these is recommended for northern districts, but in Devon and Cornwall they are a great success.

Red Cabbages are not so fully appreciated in our country as on the continent, particularly in Holland and Germany. A Dutch seed firm quotes sixteen and a German firm quotes thirteen varieties. They make excellent salad and pickles, the latter being the most popular as the vinegar gives the Cabbage a very brilliant colour. While, however, millions of our fellow countrymen eat the pickles with the greatest relish very few care to eat the red Cabbage when boiled. It must be admitted that the colour when boiled is not attractive, but those who have no fear of rheumatism should sprinkle a little slightly heated vinegar over the hot Cabbage and they will be delighted with both the colour and the taste. Some of the smaller varieties, such as Early Dwarf Erfurt, are the best for this purpose, but in large establishments the Large Red Drumhead, and the Mammoth Rock Red are more serviceable. Holland and Denmark favour such varieties as Negro Head and Zenith, which are almost black.

Dodoens figured two varieties of Red Cabbage the first being a large, loose-headed, erect-growing Cabbage with broad leaves, almost sessile, and a straight, thick stem. This Dodoens names in Brabantish, Groote-roode Koolen (Fig. 152), (in English, large Red Cabbage). In Latin it is *Brassica vulgaris sativa rubra caulis*; and regarding its history he states that Theophrastus named it *Leiophyllon*. Pliny, in one place, named it *B. Leia*, and in another, *B. Cumana*. Cato named it *Brassica laevis*, e.g., smooth-leaved *Brassica* (doubtless to distinguish it from the rugose-leaved Savoy and Borecole).

The second was a variety grown in Brabant under the name of Roode Sluijt Kool or Roosekens, a roundish, drumhead form, very much like present day Red Dutch. Its name in Latin was *Brassica capitata rubra*. Pliny in the Eighth Capital of Book 20 named it *Brassica Tritiana* (see *The Gardeners' Chronicle*, page 316) which, according to Ainsworth, was a name used by Pliny for "a kind of large Colewort." From the foregoing it is evident that Red Cabbage has been cultivated for more than 2,000 years.

Respecting the name given by Pliny to the first variety, *B. Cumana*, it is interesting to note that Cumae was a city of Campania near Puteoli, where St. Paul landed on his journey to Rome, and is now known as Pozzuoli. It was founded by a colony from Chalcis and Cumae in Æolia, Asia Minor, before the Trojan war. The inhabitants were called Cumei and Cumani. As Asia Minor is one of the homes of the Brassicas the red varieties of Cabbage might have originated there, and some seeds been brought by the emigrants to their new home. Cumae had become a very fashionable resort for the Romans in 100 B.C. Pompey the Great had a country house near by. Pliny was located there when in charge of the fleet, and with his sister was enjoying the delights of a beautiful garden when his attention having been called by her to a strange cloud coming from the neighbourhood of Vesuvius, which he learned was in

eruption, he started with his fleet on the errand of mercy which ended with his death, A.D. 79. Cumae was also, and is, a very fertile district, for to this day some of the best vegetables sent to the Neapolitan markets, particularly Cauliflowers and Onions, are grown at Pozzuoli. Somewhere about 1870, these Cauliflowers came under the notice of a British gardener named Peter Brown, for whom Messrs. J. Veitch and Sons, Chelsea, had obtained a position as head gardener to a Prince who had a beautiful estate on the heights above Pozzuoli. Brown was so impressed with the value of these giant Cauliflowers that he brought them to the notice of Messrs. Veitch and Sons who submitted them to practical tests, and finding them well suited to British cultivation, introduced them as Veitch's Autumn Giant, and Self-Protecting Autumn, and not only revolu-

a list of varieties quoted in the catalogue of Wm. Drummond, Edinburgh, for 1754. "Sugar Loaf, Red Dutch, Russia, Early May, Early York, Early Dutch, Early Battersea, Early Alnwick (English), Large English, Large Scots." Referring to Drummond's list Jas Justice states in *The Scot's Gardeners' Director*, "The Early Battersea being subject to flying up, I prefer the Sugar Loaf to it." Although the Musk Cabbage is not mentioned by Drummond, Justice calls attention to it and both he and Miller speak most appreciatively of it, and deplore the fact that "it was so much neglected that it would soon be lost."

Of the Cabbages quoted by these two the following are in use to-day: Sugar Loaf, Early York, Red Dutch, Large English (drumhead), Large Scots (drumhead), and Early Battersea.

The Sugar Loaf is apparently the oldest garden variety. Both Miller and Justice give it unqualified praise, and it is to-day universally recognised as one of the most reliable varieties in cultivation.

Turning to Miller once more, he also quotes the Chinese Cabbage (ante-dating Don's *Hort. Cant.* by eleven years), and the Turnip-rooted Cabbage, which will be dealt with at some future date, also the Musk Cabbage, of which he states: "The Musk Cabbage has through negligence been almost lost in England, though for eating it is one of the best varieties we have . . . those who cultivate them for their own table should make choice of this . . . for it is always looser and the leaves more crisp and tender, and has a Musky scent when cut; but if the winter proves hard these will be destroyed much sooner than the common sort." Does anybody grow this paragon to-day?

Lastly, Miller mentions the taller, shrubby, branching Sea Cabbage, which is probably what is now known as Thousand Headed Cabbage or Kale.

The last list of the eighteenth century to which I shall now refer, is that of John Mason, 152, Fleet Street, for 1793. In it are quoted ten varieties as follow:—Mason's Earliest Dwarf, Early Yorkshire, Russian, Sugar Loaf, Early Battersea, Imperial, Mason's True Transplanted Drumhead Winter, Common Scot's, Red Dutch, and Hollow Long-Sided: the last-named appears to be a renamed Sugar Loaf. The catalogue of Messrs. Cooper, Taber and Co., Ltd., John Mason's present day successors, quotes seventy-three varieties of which twenty-four are round or drumhead kinds. As there are more than 300 varieties before the public at the present time this can only be a select list of those most in demand. Many other sorts must necessarily be grown or procured for special trade.

Mention should here be made of Miller's fifth sort, the Chinese Cabbage. The Rev. Hilderic Friend in his intensely interesting and informative article on Garden Lore of Ancient China, vide *Gard. Chron.*, August 3, 1925, informs us that the specific epithet for Cabbage in ancient times was *Ye-so-oi*. It is apparently safe to assume that the Cabbage was then an article of consumption, but was it a special development of *Brassica oleracea* or the plant known as *B. sinensis*, Linn, of which an effort more or less successful has been made to popularise it as a salad or a cooked vegetable in our own days. Of this three varieties have been offered. Pak-Choi, upright growing, the leaves boiled and the ribs used like those of Swiss Chard Beet, named by Burpee Chinese or Celery Cabbage. Mr. Burpee states that "it needs a cool summer to bring it to perfection. It may be used as a salad Lettuce or when cut makes delicious cold slaw." Boiled, it is even more palatable than ordinary Cabbage. The improved heading Wong Bok, of Burpee, is the best for both purposes, but it also needs a mild climate. Petsai is offered in Europe, but very few seedsmen quote it, chiefly on account of failures in cultivation. *The Vegetable Garden* records "it is equal to boiled Endive." S. B. Dicks.

(To be concluded.)



FIG. 152. —GROOTE ROODE KOOLEN.

(GREAT RED CABBAGE).

From the *Herbal* of Dodonaeus.

tionised the Cauliflower trade which had been mainly confined to Early London, Erfurt, Walcheren, Asiatic, etc., but made the name of Veitch justly famous throughout the civilised world.

While there are other authors to which I might refer if necessary on matters of history, space forbids, so I will pass on to Miller's *Dictionary*, VII Edition, 1759, where we find nearly seven large folio pages devoted to Brassicas, consisting mainly of cultural directions and other matters foreign to our present purpose. The following are the varieties and descriptions quoted:—*Brassica radice caulescente toretica* Hort. Cliff. 338, Cabbage with a taper fleshy stalk. This is the *Brassica capitata alba* C.B.P.111, the common white Cabbage. The varieties of this sort are:—Sugar Loaf, Red, Early, Foreign Musk, Small Russia, Large Sided, two Savoys and three Kales, making eleven in all."

Here, for comparison, I may interpolate

HOME CORRESPONDENCE.

Salvia Greggii.—Few plants are more attractive in autumn than *Salvia Greggii* with its arching branches thrown out in graceful sprays extending each for two feet or more, and bearing numerous carmine flowers. This plant is seen to perfection when growing on a south wall. Nicholson, in describing *Salvia Greggii* as a greenhouse shrub, implies that it is tender; but experience of the past two years in an Oxfordshire garden shows that it easily withstands an ordinary winter. Cut back to old wood in spring, *Salvia Greggii* throws out fresh festoons of shoots which begin to flower in August, and continue bright with blossom into late September. It is a plant, moreover, which is easily propagated by cuttings. *K. O.*

Dundee Flower Show.—A slight error has crept into your report of the Dundee Flower Show in your issue of September 12, p. 216. The first prize for six dishes of Potatoes in as many varieties was awarded to myself instead of to Mr. J. Macgregor. *J. J. Steward, Bean Manor Gardens, Woodhouse, Loughborough.*

Training of Young Lads in Horticulture.—(see p. 270-317).—I was much interested in Mr. W. W. Pettigrew's remarks on the training of young gardeners. This subject has always had a great attraction for me, and more than twenty years ago, when living in the south of Ireland, I was writing on it in the gardening press of that period. In some quarters very little importance is attached to the training gardeners receive in their earlier years, and yet it is usually lack of training which brings many a gardener into serious difficulties later in life. Since the upheaval caused by the late war, gardening in private establishments has been a vastly different business to that previously practised, and in certain directions many of the horticultural exhibitions this year have revealed a decided weakness in one important part of a gardener's work. Whenever gardeners meet at the present time, the question of suitable, trained men crops up, and the difficulty of finding the right type of lad to start with is freely admitted. With regard to the lad who has had a secondary education, Mr. Pettigrew puts his finger on the spot when he states that "parents are very loth to encourage their sons to become gardeners when they learn what the financial prospects are at the end of their training." It comes to this, that though in a few isolated cases some boys choose a gardening career because of a real interest in it, in many instances boys in villages start in the garden after leaving school and gradually work their way up through the various stages as improvers and journeymen, until they feel ready to take over the management of a garden or department as the case may be, while a large percentage of them, having no real interest in gardening, leave it as they grow older and see other and possibly better paid posts open to them. From a park superintendent I was especially interested to learn so emphatic an opinion "that a good private garden was the best possible training ground for gardeners." I have had no experience of work in public parks, but have always felt that for a youth who has a keen interest in his work, a well-managed and well-equipped private garden is an excellent place in which to get that thorough grounding which is so necessary to success in gardening, and however much public parks take up the question of training lads in horticulture, I have great doubts as to the general suitability of the average town lad as compared with the country-bred lad, who usually starts off with some little knowledge of the subject. These country lads will, I believe, still be the backbone of gardening in private places, and those of us who have the opportunity should take some little pains to encourage the youngsters to make themselves efficient in everything appertaining to their work. Mr. Pettigrew speaks of examiners in horticulture finding that candidates can sometimes write really splendid papers, while their practical work is extremely poor. As one who has assisted in horticultural examinations

for some years, I fully endorse that statement, and should like to point out that the Council of the Royal Horticultural Society takes a most important view of the practical work done by candidates presenting themselves for examination at Wisley, by laying it down in their regulations "that no amount of excellence in the written part will qualify a candidate if he fail in the practical." Again, as an aftermath of the war, and consequently greatly increased cost of labour and of everything else required for the garden, the owners of numbers of large private gardens throughout the United Kingdom have been very seriously handicapped in running their gardens, and the gardeners know only too well how difficult it has been to carry on the work in the efficient manner they were accustomed to in the past. For the same cause, many of the collections of beautiful plants, once grown so well, are well-nigh extinct, having been side-tracked and all available space devoted to the growing of Tomatoes and Cucumbers for market, while the general high standard of neatness and cleanliness has been much reduced. This type of gardening has all tended to make the training of lads a somewhat haphazard business, while the tendency to rush over work in a rough and slovenly manner has become very marked. This, I believe, is a great mistake, and I doubt very much if bad workmanship and bad management tends in the slightest degree to economical working—rather the reverse. Let no one imagine that I think we can go back to the more leisurely methods of the past, or that many valuable lessons have not been learnt by the more strenuous methods of to-day, but I feel that many of our young men have not had the opportunity of assisting in doing things well in many of the gardens of the present time, which must have a great effect in shaping the character of a youth to do his best. One of the great defects in many gardens is that, in consequence of the reductions both of staff and expenditure, far too many things are attempted—the results in many instances being lamentable to all concerned. It would be far better to concentrate on the essentials required and do these well than to undertake so many things. What chance has a lad of receiving a suitable training under such conditions—and a considerable amount of patience is required of the head gardener who employs such young men. I would strongly urge the younger members of the craft to take advantage of every opportunity to make themselves thoroughly efficient in all branches of their profession, remembering that it is attention to small details which eventually ensures success, and that the knowledge gained by experience can never be lost. *J. G. Weston, Chatsworth Gardens.*

Large Trees.—Under this heading your correspondent (*E. D. Deighton*), refers on p. 317 to the Tulip Tree, *Liriodendron tulipifera*. It is surprising that this fine deciduous tree has not been more freely planted as an ornamental subject. I know of some fine specimens of attractive appearance, viz., at the Royal Botanic Gardens, Regents Park; Knowle, Sevenoaks; and Fair Oak, Petersfield. This tree forms a handsome specimen resembling the Plane, and bears large, solitary, orange-coloured blossoms freely in summer. It is perfectly hardy, being indigenous to North America, and is commonly known as the Saddle Leaved Tree on account of its leaves resembling the form of a horse's saddle in outline. *Thos. Coomber.*

Large Apples.—I agree with Mr. J. Yandell (p. 314), that some varieties of Apples grow largest in a hot summer, and, as he remarks, Cox's Orange Pippin shows this particularly. I never had this variety so large as in the hot, dry season of 1921, when most varieties were below the average in size. Some of the varieties of which Cox's Orange Pippin is one of the parents, exhibit the liking for a hot summer, notably Charles Ross and Rival. In a cold, wet year Cox's Orange Pippin is thoroughly unhappy in my plantations. This year the largest and cleanest specimens of this variety came from a very much sheltered corner. *Market Grower.*

SOCIETIES.

NATIONAL SWEET PEA.

THERE was a good attendance of members at Essex Hall, Strand, on Tuesday, October 20, on the occasion of the annual general meeting of the National Sweet Pea Society. In the unavoidable absence of Mr. E. Sherwood, the President, the Chair was taken by Mr. H. A. Perkin.

The formal proceedings were soon disposed of, and the Committee's Report and Statement of Accounts were read by the Secretary, Mr. A. C. Bartlett. The report stated that the Annual Show, which was held at the R.H.S. Hall, Westminster, on July 16 and 17, was one of the best ever been held by the Society, both as regards the number of exhibits and the great excellence of the blooms. During the first day of the show Mrs. Robert Bolton and Mrs. Cecil Bartlett most kindly sold the flowers which the members had given to aid the funds of the Society, and were able to hand over the sum of £21 15s. 6d. The attendance was good, and the gate money amounted to £24 15s. 0d. Mr. Lester L. Morse, of San Francisco, a Vice-President and a generous supporter of the Society, and Capt. A. B. Matthews, of British Columbia, were present. The Walter Voss Challenge Cup was won outright by Mr. J. RANDALL, of Leamington Spa. Sir RANDOLF BAKER, Bart. (gr. Mr. A. E. Usher), of Ranston, Blandford, has won the Sutton Cup for seven successive years and Messrs. ROBERT BOLTON AND SONS won both the Eastbourne and the City of Bath Challenge Cups. The Society's Novelty Trials were again grown by Mr. F. J. England, at the Syon House Gardens, Brentford. Messrs. Watkins and Simpson have very kindly consented to grow next year's Trials on their own grounds at Twickenham. During the year 101 new members and five vice-presidents joined the Society, while sixteen societies became affiliated. The Committee expressed deep regret at the loss by death of Mr. Horace J. Wright, who was one of the founders of the Society, and, particularly in the strenuous early days, worked untiringly for its success. Mr. Wright was also the Society's first Hon. Secretary; he was Chairman of Committee in 1909, and Chairman of the Floral Committee in 1907. Mr. Whitpaine Nutting, who had been a vice-president of the Society since its formation, and was Chairman of Committee in 1904, passed away during the year and his loss is severely felt.

In regard to finance, the accounts showed a deficit of £36 14s. 6d. on the year's working, the loss being due to the exceptionally large increase in prize money won at the Annual Show and in the cost of growing the Novelty Trials. The amount paid in prizes showed an increase of £25 9s. 6d., while the increased cost of growing the Novelty Trials, with the classification varieties, was £19 1s. 0d.

The Chairman briefly reviewed the work of the year, and moved the adoption of the report and accounts. Mr. C. H. Curtis, on behalf of the Treasurer, Mr. J. M. Bridgeford, who was unable to attend, seconded the motion, and pointed out that at the previous annual general meeting the members did not accept the recommendation of the Floral Committee to the effect that trials should not be held in 1925, consequently they were chiefly responsible for the deficit on the year's working. He expressed the hope that with a larger income from the Cheltenham Show next season, and the considerable reduction in the cost of the trials, next year's accounts would show a balance on the right side.

The Chairman and Secretary satisfactorily answered one or two questions raised, and the motion was then carried.

Mr. Leonard Collingridge was unanimously elected President for the ensuing year, and Mr. E. Sherwood heartily thanked for his services as President during the year just ended. Mr. J. M. Bridgeford was re-elected Treasurer; Mr. E. R. Jones was appointed Chairman of Committee; Mr. A. C. Bartlett was re-elected Secretary, and Mr. J. S. Brunton

as Editor, while Messrs. Cobby, Kay and Co. were again appointed Hon. Auditors.

All the eligible members of the General Committee were re-elected, and Messrs. H. Perkin, McGregor, L. Bail, H. Plumley, and H. Mortimer were chosen to fill vacancies. Mr. Stark was added to the list of corresponding members. The voting for membership of the Floral Committee resulted in the appointment of Mr. E. H. Christy, Mr. C. H. Curtis, Mr. F. J. Rogers, Mr. A. E. Usher, and Mr. F. W. Franks, amateurs; and Mr. Andrew Ireland, Mr. Robt. Bolton, Mr. J. Stevenson, and Mr. E. R. Janes, traders. In accordance with rule, five members of this committee must be amateurs and four traders. As is already known, the Floral Committee made no awards to novelties in 1925, but Wembley, Messrs. R. Bolton's variety, reserved for the Gold Medal in 1924, was found to be true, and consequently was awarded the Gold Medal.

The report of the Floral Committee was presented by Mr. C. H. Curtis and accepted without comment. Mr. Curtis also presented the report of the Trustees of the Henry Eckford Memorial Fund which showed a balance in hand (as stated on p. 323) of £56 8s. 3d. The Memorial Medal for 1925 was awarded to Mr. ANDREW IRELAND.

Thanks to Mr. Perkin and to Mr. Leonard Collingridge, who presided during the latter part of the proceedings, concluded an interesting meeting.

PEEBLES CHRYSANTHEMUM.

THE seventy-fourth exhibition which was held on Saturday last was not up to the standard of former years in respect of the entries and the quality of the exhibits, though there were individual classes where competition was as keen as before. Owing to the injury done by recent frosts early flowering Chrysanthemums were a smaller section, but the decorative classes were meritorious. The principal prize-winners were as follow:—Gardeners: Messrs. W. HOGARTH, C. WILSON, J. COCHRANE, D. YOUNG, A. MACDONALD, R. DODDS, D. C. ENGLISHAM, and ALEX. CRUIKSHANKS; Amateurs: Messrs. H. M. GOVAN, L. BOBLE, W. FORREST, A. PATERSON, R. MELROSE, and G. GRAHAM.

Vegetables made a strong section, and Carrots, Leeks, Celery, Onions, and Potatoes were particularly good, while the display of honey, under the auspices of the Peebleshire Beekeepers Association, attracted the public as well as competition.

BELGIAN HORTICULTURAL CONGRESS.

THE fourth Belgian National Horticultural Congress took place from the 12th to the 14th September, at Antwerp and Borgerhout, under the patronage of M. de Vyvere, the Belgian Minister of Agriculture. A number of distinguished horticultural personalities were present, including Baron E. de Kerchove d'Exaerde, President of the Belgian Federation of Horticultural Societies, who was also President of the organising committee of the Congress. A number of useful and interesting subjects were discussed, and a banquet and several excursions to places of interest provided social enjoyment.

GUILDFORD AND DISTRICT GARDENERS'.

ON October 20, a wet and dreary night, a remarkably large number of members attended the Annual Meeting of this Association.

The President, Alderman W. T. Patrick, J.P., presided, and presented the report of the past year's work, together with the Statement of Accounts. From these it appears that 624 members had paid subscriptions up to the time of closing the account, and some arrears were still due. Notwithstanding the heavy expenses connected with the Summer Show, and about £40 on the monthly *Journal*—started in February last and distributed free to members—the balance came out on the right

side, leaving a sum of £32 with the Treasurer.

It was announced that a series of lectures arranged for the winter season would commence on November 10, when Mr. J. Cheal of Crawley would lecture on the "Modern Dahlia, and what can be done with it." Other lectures by Mr. Auton, of Pyrford Court: Mr. Prince, formerly of Polesden Lacey; Mr. Kirkwood, of Sutton Place; Mr. F. J. Chittenden of Wisley, will follow in due course. Arrangements to extend the work of the Society by providing lectures in villages close at hand are being made.

The President was re-elected, and Mr. Patrick's continuance in office has given great satisfaction. He is a keen horticulturist and a hard-working President who attends every outing, every lecture, and every Committee meeting.

The Society is equally fortunate in its other officers. Mr. Nation, the Treasurer, who is Manager of the Guildford branch of Barclay's Bank, and the Hon. Secretary, Mr. Sawyer; the Show Secretary, Mr. Tylecote, and the Lecture Secretary, Mr. Kingett, are all enthusiasts, while the Secretary of the Rose Section, Mr. W. Harvey, is a well-known authority, and has acted as judge at the London shows of the National Rose Society. The President expressed hearty thanks to the Press for the excellent reports of the work of the Association which constantly appear.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

THURSDAY, OCTOBER 1.—*Committee present*: A. Hanmer, Esq. (in the chair), Messrs. R. Ashworth, C. Branch, A. Burns, A. Coningsby, J. Cypher, J. Evans, A. Keeling, D. Losh-Thorpe, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATE.

Brasso-Laetia-Cattleya Golden Crown var. Prince Humbert (B.-L.-C. Joan × C. Venus).—A well formed flower with broad segments of a beautiful golden yellow; the lip is maroon coloured. From H. T. PITT, Esq.

AWARDS OF MERIT.

Cattleya Venus, Pitt's variety; Zygopetalum Blackii (Perrenoudii × crinitum). From H. T. PITT, Esq.

GROUPS.

S. GRATRUX, Esq., West Point (gr. Mr. C. Branch), staged a group to which a Silver-gilt Medal was awarded.

A Silver-gilt Medal was also awarded to H. T. PITT, Esq., Rosslyn, Stamford Hill (gr. Mr. Thurgood), for a miscellaneous exhibit of Orchids.

Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), were awarded a Large Silver Medal for a group composed of well-flowered plants of *Odontoglossum grande*; a special Cultural Award being granted to the gardener.

A Large Silver Medal was also awarded to Messrs. J. CYPHER AND SONS, Cheltenham, for a group.

FRIDAY, OCTOBER 16.—*Committee present*: H. Astley Bell, Esq. (in the chair), Messrs. R. Ashworth, C. Branch, A. Burns, A. Coningsby, J. Cypher, G. Giles, Capt. W. Horridge, E. W. Thompson, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Odontoglossum Ithone (L'Aiglon × Dusky Monarch).—A large flower of good form and texture with a pink ground and marbled markings of deep chocolate. From S. GRATRUX, Esq.

Odontoglossum Prince of Wales (Lambeauium × Perfection).—A large, well-set flower of reddish-purple colour, the sepals and petals tipped with white. From Mrs. P. SMITH.

AWARD OF MERIT.

Sophro-Cattleya Flammée (S.-C. Doris × C. Tuius). From Mrs. P. SMITH.

GROUPS.

A. HANMER, Esq. (gr. Mr. G. Giles) staged a group to which a Large Silver Medal was awarded.

Mrs. BRUCE and Miss WRIGLEY, Bury (gr. Mr. A. Burns), were awarded a Silver Medal for their exhibit.

A Large Silver Medal was awarded to Messrs. J. CYPHER AND SONS for a group of miscellaneous Orchids.

NORTHERN COUNTIES FRUIT.

AN exhibition of fruits, flowers and vegetables held at Carlisle on the 14th and 15th inst. under the auspices of the Four Northern Counties Society was a great success. Apples especially were of outstanding merit and Pears also were a strong feature. The show was made additionally attractive by several trade and educational exhibits, the latter including specimens showing plant diseases from Armstrong College, Newcastle.

The Silver Challenge Cup presented by Mr. L. Collision, for Apples, open to market growers, was won by Mr. W. WALTON, Carlisle. The Challenge Cup presented by Col. J. L. Marr, for a collection of hardy fruits, open to growers in Durham county only, was won by Mr. R. H. LAIDLER; second, Mr. H. WHITELEY; the Silksworth Cup, for fruits, was won by the latter gentleman. The first prize in the class for Apples open to growers in Cumberland was won by Mr. J. HAY, Houghton Hall, and the Challenge Cup presented by Mr. T. D. STRAKER-SMITH for twelve dishes of fruit, distinct, was won by LADY KNOTT (gr. Mr. W. Anderson), Wylam. Mrs. Benson presented a silver trophy for six dishes of Apples, distinct, and this was won by Mr. S. MOOR, Hexham.

The following awards were made for trade and educational exhibits: Gold Medal to Mr. W. WALTON, Bellgarth Nurseries, Carlisle, for fruit packed for market. Silver-gilt medals to Mr. J. MILLICAN, Scotby, for locally grown fruit; to Messrs. CLARK, Bros., for northern grown fruit and trained fruit trees; to the CUMBERLAND COUNTY FARM SCHOOL, Newton Rigg, for experimentally grown fruit; to the CUMBERLAND BEEKEEPERS' ASSOCIATION. Special prize for exhibits of fruits and plants to Messrs. LITTLE and BALLANTYNE, Carlisle. Silver Medals to the ARMSTRONG COLLEGE, Newcastle, for an educational exhibit of fungous pests; to the CARLISLE MUSEUM, for an educational exhibit. Award of Merit from the Local Committee for fruit and fruit trees shown by Messrs. CLARK, Bros., Carlisle.

READING AND DISTRICT GARDENERS'.

AT a meeting of this Association held on the 17th inst. under the chairmanship of Mr. A. W. Gower, a lecture was delivered by Mr. W. Auton, Pyrford Court Gardens, Woking, on "The Chemistry of the Garden." Mr. Auton stated that the life cycle of a plant from seed to seed is one long series of chemical reactions whilst plant food in the soil is brought to a fit state for absorption by the root hairs by the same activity. Several members took part in a discussion which followed Mr. Auton's remarks.

In a competition for three vases of early-flowering Chrysanthemums, there was only one competitor, Mr. M. GODDARD, who was awarded the first prize. In a class for three vases, not disbudded, the first prize was awarded to Mr. J. R. LLOYD, Shinfield; second, Mr. W. J. KNIGHT, Beecham Road, Reading, and third, Mr. H. WYNN, Lucina House Gardens, Goring Heath.

In the non-competitive section First-Class Certificates were awarded to Mr. E. ILES, Brighton Road, Reading, for Chrysanthemums; and to Mr. E. COOPER, Conisborough Avenue, for a collection of Roses; whilst an Award of Merit went to Mr. C. S. CLACY, Sidmouth Grange Gardens, for Brussels Sprouts. Several new members were elected.

ROYAL SCOTTISH ARBORICULTURAL.

ABERDEEN BRANCH.

Mr. C. S. France, President, presided at the meeting held on the 17th inst. Those present included Sir John R. Gladstone, Bart., of Fasque, Mr. Sydney J. Gammell, of Countesswells, Mr. John Michie, M.V.O., late factor to the King at Balmoral, Mr. F. W. Law, M.A., B.Sc. (Agri.), forest nurseryman, Aberdeen, Mr. J. F. Annand, O.B.E., B.Sc., and Mr. James McKay, divisional officers, Forest Commission, Aberdeen and Mr. Watt, of the Forestry Department, Aberdeen University. The leading item on the agenda was a paper by Mr. Frank Scott, divisional officer of the Forestry Commission, Inverness, on "The Direct Sowing of Conifers." In 1917, said Mr. Scott, the French Forest Authority allocated to the British Army for exploitation by the Forestry Directorate a number of Scots Pine coupes in Normandy. A condition of the sale was that the area was to be immediately afterwards prepared and sown out with Scots Pine seeds collected from Scotland. Over 200 to 300 acres were sown in 1918 and 1919. The germination was good except on a small area where the work was carried out too late in the season. Chiefly as a result of the experience gained in these operations, experiments were carried out in this country, beginning in 1920. These were markedly successful. Larger blocks were subsequently laid down, and full and vigorous young trees had been established. That method of afforesting land was one which in pre-war time received little attention in this country.

It was somewhat difficult to draw comparisons between plantings and sowings of Scots Pine, because of the fluctuations in prices, both of seeds and plants, but at a price of £1 per thousand for two-by-one plants—and this was about the current price—and 15s. per lb. for the seeds, the cost of planting at four feet spacing worked out at £3 19s., and the cost of preparation, sowing, and seed at £2 13s., a difference in favour of sowing of £1 6s. To the advantage of sowing, transport charges were practically nil, while transport and securing of plants on the planting area might increase the cost by 3s. to 6s. an acre. In connection with beating up, the cost of plants had to be put against the planted area; a ten per cent. beat up would add 5s. and a twenty per cent. beat up 10s. per acre in favour of sowing, but cleaning would be required under similar conditions, for one, or perhaps two years longer in sown areas than in plantations, and this might reduce the balance in favour of the former by 7s. to 15s. Generally speaking, therefore, sowing of Scots Pine would only be considerably cheaper than planting when seeds could be purchased at less than £1 per pound, and the higher the price of two-by-one Scots Pine transplants rose above £1 per thousand the greater the advantage in sowing.

In comparing the two operations—sowing and planting—in relation to Norway Spruce, there was a difference in the initial cost of about £2 4s. per acre, taking seed at 5s. and transplants at 30s., with five feet spacing for planting and six feet for sowing. In areas where Spruce transplants remained for long in check the difference in the cost of cleaning might not be very great, but it would generally be about 15s. more in sowings than in plantations. In addition to sowing being cheaper it was for bad transplanters like Corsican Pine a safer method.

Cleaner timber was produced from sown crops, and better shelter was established. The greatest advantage from direct sowings would be secured when seeds were cheap and plants were dear, where transport costs to the area were high, and where, on steep or otherwise difficult ground, the distribution of plants was expensive. Given reduction of costs, which experience and experiment may yet effect, it might become possible to grow the more exacting species, such as Douglas Fir or Sitka Spruce, probably

in mixture. The chief disadvantages were that sowing was dependant on a sufficient and cheap supply of seed, and that mistakes in the selection of sites led to more serious loss than in planting. At a time like the present, when large areas of our woodlands were without a stock, he urged upon all concerned a trial of direct sowing as a cheap method of working up some of the arrears whenever the conditions were favourable.

Mr. S. J. Gammell, of Countesswells, a leading proprietor authority on forestry, said he had tried almost every method of sowing and planting. One method which Mr. Scott had not referred to was in making use of derelict land and sowing tree seeds like grass seed with corn. When the corn was cut it was with a fairly high stubble, so that the young trees were practically uninjured. He had thirteen acres like this successfully sown on the farm of Dellavaire on the Drumtochty estate in Kincardineshire, and could show photographs of the plantation at three and four years. He had used a good deal more seed than Mr. Scott had been speaking of, but at the time seed was cheap. One method of getting a good crop with which he was very favourably impressed was in the preparation of the seed-bed simply by the hoofs of animals—pigs, sheep, or cattle put on the ground fairly closely and allowing them to trample in the seed. That saved the cost of labour.

Sir John R. Gladstone, president of the parent society, asked if Mr. Scott had good results from patch sowing, and Mr. Scott replied in the affirmative, citing his experience on the continent.

Mr. Frederick W. Law, forest nurseryman, Aberdeen, said he had not much experience of direct sowing, but he had found where trees were sown in small patches there was a danger of the plants being "drawn," and there was difficulty in getting a satisfactory crop.

Mr. John Michie, for many years head forester and latterly factor to the King at Balmoral, said sowing of forest trees was not new in this country, and narrated the experience he had some forty-five years ago in sowing trees in the Ballochbuie forest on the Royal estates. Excellent results were obtained by natural regeneration of the Conifers in the Ballochbuie forest. At the same time they obtained larger trees, though the quality of the timber might be of a finer and harder texture in the trees from natural regeneration than from those planted. He favoured judicious planting.

Mr. C. S. France, chairman of the branch, related his experiences as a forester in the Highlands of Scotland, with special reference to Rothienorman and Glen More forests. He favoured the old system of planting as preferable because there was less risk of failure, and because certain classes of trees were the better for being transplanted.

Obituary.

James Sykes Gamble.—By the death, at his residence, Highfield, East Liss, on October 16, of Mr. J. S. Gamble, C.I.E., F.R.S., forestry has lost a distinguished representative and descriptive botany has been deprived of one of her most competent and faithful servants. Born on July 2, 1847, the son of Dr. Harfur Gamble, R.N., Gamble was educated at the Royal Naval School, New Cross, and at Magdalen College, Oxford, where he distinguished himself by taking a first class in both examinations of the mathematical schools. Entering the Indian Forest Service in 1871, he was educated at Nancy, though, owing to the war with Prussia, he was one of the group of students that had, for a time, to leave France and pursue part of its course of studies in Scottish forests, and at the University of St. Andrew, under the late Dr. H. Cleghorn, of Stravithie. To this experience, to some extent, may be

traced the liking for botanical pursuits which marked his official career, and manifested itself during his earlier days in India by the preparation of a valuable list of trees, shrubs and large climbers of the forests in the Darjeeling district. His happy combination of skill as a forester and competence as a botanist was even more markedly shown in the classical work on *Indian Timbers*, for which both botanists and foresters have to thank Gamble. At the instance of his friend, the late Sir George King, Gamble prepared for the *Annals* of the Royal Botanic Garden, Calcutta, a masterly monograph of the Bamboos of British India, again a work that only one who was both an experienced forester and a competent descriptive botanist could venture to attempt. After filling, with distinction, various forestry appointments in Bengal and in Madras, Gamble, during the closing years of his official service, held the important post of director of the Imperial Forest School at Dehra Dun, in the United Provinces. His affection for Oxford and for his old department found congenial expression in the assistance he was able to render both by taking a share, at intervals, in the examination and other work of the Oxford School of Forestry. When Gamble retired, his friend, Sir George King, who was engaged, in spite of failing health, in the heavy task of continuing his materials for a flora of the Malayan Peninsula, appealed to him for help. During the rest of King's life the two collaborated on this great work, and after his friend's death in 1909, Gamble carried it on single-handed. When at last the end was in sight, Gamble, at the instance of the India Office, began another equally arduous task, the preparation of a flora of Madras for which, by long experience of the vegetation of that presidency, he was singularly qualified, and the sadness of those who grieve for the loss of a highly gifted friend is increased by the reflection that this very important task had not been completed when he fell in harness to the last. In his early days, as a student at St. Andrews, Gamble became a Fellow of the Botanical Society of Edinburgh. After reaching India he became a Fellow of the Linnean Society of London; the appearance of his monograph of the Indian Bamboos was followed by his election to the Royal Society; the excellence of his efficient work was marked by his appointment as Companion of the Most Eminent Order of the Indian Empire. Mr. Gamble, after retiring, married in 1911 Miss Gertrude Latter, who survives him, and whose sorrow is shared by all those whose good fortune it was to be honoured by the acquaintance of her distinguished husband.

Elisha J. Hicks.—It is with very great regret we announce the death of Mr. Elisha J. Hicks, Rose grower, of Hurst, Berkshire. Mr. Hicks, who was fifty-seven years of age, died in a nursing home at Reading, on Sunday, the 25th inst. He gained remarkable success in the cultivation and exhibiting of Roses, and his firm won many successes at all the important exhibitions for these flowers. He had been in ill-health for some considerable time, and was not able to be present at the autumn exhibition of the National Rose Society at Regent's Park, where his exhibit won the second prize award in the nurserymen's section for a group of Roses. He won the Wigan Challenge Cup no fewer than six times, and the National Rose Society's challenge trophy for a group of Roses on three occasions. Mr. Hicks distributed many notable new varieties, including some fine Roses with very pronounced perfume. A portrait of Mr. Hicks, together with a short account of his professional career, was published in *Gard. Chron.*, October 21, 1922.

SCHEDULES RECEIVED.

MARLOW AND DISTRICT CHRYSANTHEMUM SOCIETY.—Fourth Exhibition to be held on Wednesday, November 4.—Secretary, Mr. A. J. Benning, Edgcote, Station Rise, Marlow.

HENFIELD CHRYSANTHEMUM SOCIETY.—Thirty-sixth Exhibition to be held in the Assembly Rooms on Thursday, November 5.—Secretary, Mr. J. M. Musson, Ivy Cottage, Henfield.

MARKETS.

COVENT GARDEN, Tuesday, October 27th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Erica gracilis, 48's	s. d. s. d.
cuneatum	10 0-13 0	per doz.	24 0-30 0
per doz.	10 0-12 0	—nivalis, 48's per	
—elegans	10 0-12 0	doz.	24 0-30 0
Aralia Sieboldii	9 0-10 0		
Aracarias, per		Above varieties	
doz.	30 0-42 0	in 60's, per doz.	12 0-15 0
Asparagus plu-		—in Thumbs, per	
mosus	12 0-18 0	doz.	9 0-10 0
—Sprengeri	12 0-18 0	Marguerites, 48's	
Aspidistra, green	36 0-60 0	per doz.	15 0-18 0
Asplenium, per		Nephrolepis in	
doz.	12 0-18 0	variety	12 0-18 0
—32's	24 0-30 0	—32's	24 0-30 0
—nidus	12 0-15 0		
Cacti, per tray,		Palms, Kentia	30 0-48 0
—12's, 15's	5 0-7 0	—60's	15 0-18 0
Chrysanthemums,		Pteris, in variety	10 0-15 0
pot grown, in		—large 60's	5 0-6 0
variety, 48's per		—small	4 0-5 0
doz.	18 0-24 0	—72's per tray	
Crotons, per doz.	30 0-45 0	of 15's	2 6-3 0
Cyrtomium	10 0-25 0	Solanums, 48's per	
		doz.	12 0-15 0

REMARKS.—Supplies, generally, have again become more plentiful owing to the return of milder weather, and most subjects have been sufficient to meet the moderate demand during the past week. Liliun longidormum, and Richardia (Arums) are much improved in quality, and the latter were offered at reduced prices this morning owing to the increased supplies. Trade in Roses shows but little change from that of last week; most varieties are arriving in good condition. Carnations are good in quality and supplies are much improved; their prices, generally, are on the down grade. Gardenias and white Bouvardia are very limited in quantity, and prices for these flowers remain firm. Violets Princess of Wales is offered at cheap rates for supplies are again heavy; the blooms are excellent in quality. Supplies from France are gradually increasing; the latest arrivals are white Narcissus and Carnations. Parma Violets are coming to hand in good condition, and supplies have been available daily, the weather conditions being now more favourable for these flowers.

Fruit: Average Wholesale Prices.

Apples, English, s. d. s. d.	Grapes, Almerian, s. d. s. d.
per 4 slope—	
—Cox's special	10 0-15 0
—best	6 0-8 0
—others	3 0-5 0
—King of the	
Pippins	3 0-5 0
—Ribston Pippin	4 0-6 0
—Worcester Pear-	
main	2 6-5 0
Apples, Cooking—	
—Bramley's Seed-	
ling	4 0-6 6
—Lane's Prince	
Albert	4 0-5 0
—Lord Derby	4 0-5 0
—Blenheim Pippin	6 0-10 0
Apples, American	
Jonathan	10 0-14 0
—Newtown	12 0-15 0
—Albemarle	26 0-30 0
—York Imperial	
barrels	25 0-30 0
Apples, Nova Scotia—	
—Ribston, barrels	16 0-22 0
—King's	16 0-22 0
—Blenheim, barrels	16 0-20 0
—British Colum-	
bian, Cox's, per case	14 0-15 0
Bananas	12 0-22 0
Blackberries—	
—wild, per lb.	0 4 0 5
Chestnuts, Italian,	
per bag	16 0
—French, per bag	18 0
Cobnuts, per lb.	1 2-1 3
Figs, French, per	
box	0 10-1 6
Grapes, per lb.—	
—English	1 0-2 0
—Colmar	1 6-3 0
—Muscat	2 6-6 0

REMARKS.—Some slight improvement has been noticeable in the volume of business transacted during the past week, but it is still far from satisfactory. The best packs of English Apples have moved with more freedom, but second and medium grades remain in very poor demand. Imported Apples are plentiful but are meeting a poor reception. Hothouse Grapes are abundant and prices are at a comparatively low level, except for some choice Muscat of Alexandria and Canon Hall. English Pears are scarce but there are plenty of Californian Doyenné du Comice, Winter Nells and Beurré d'Anjou available. New crop Tomatos are selling at better prices but old crop and outdoor Channel Island produce are not wanted except at a low price. The best of the Canary Island Tomatos are selling well. Cucumbers are selling freely at slightly better prices. Guernsey forced Beans and Potatoes are a fair market the former showing some hardening in quotation. Beans from Madeira are in slightly better condition this week. Supplies of Mushrooms have been variable; and the prices have shown some fluctuation. Salads are selling fairly well. Green vegetables are a steady trade. The Potato section is reported as quiet.

GLASGOW.

A material improvement is to be recorded in the conditions prevailing in the cut flower market this week. The retail trade demand was good, and as supplies of Chrysanthemums, which constituted the bulk of the business, were on a smaller scale; the recovery in prices that began on Friday was maintained on Monday, and the upward movement made further progress on Thursday and Friday, when the highest levels of the week were reached. Consignments were more easily disposed of, and as sprays are now approaching the end of the season the average quotations which follow reflect advances varying from 2d. to 4d. per bunch:—Holme's White, Loan's Cream and Loan's Yellow, 4d. to 6d.; Loan's Pink 3d. to 5d.; Roi de Blanc, 5d. to 7d.; and the various members of the Masse group, 4d. to 7d. Disbudded blooms were plentiful and of good quality. Almarante, small, made 9d. to 1/- for 6's; large, 1/- to 1/6; La Pactole, 1/3 to 1/9; Sanctity, 1/- to 1/4; Delores, 10d. to 1/3; Yellow and White Thorpe, 1/9 to 2/-; Betty Spark, 1/3 to 1/6; Framfield White, 7d. to 10d.; Pink Profusion, 1/2 to 1/4; and Blanche Dupolton, 1/9 to 2/3. All the varieties were locally grown. South of England specimens sold as follows:—Pink Consul, 1/9 to 2/-; No. 1 White, 1/2 to 1/6; No. 2 White, 1/4 to 1/6; Framfield Yellow and No. 2 Pink, 1/3 to 1/6; and Alcide, 1/- to 1/3. Carnations were firmer at 2/6 to 3/6 per dozen, while sharp advances were conceded for Roses, Ophelia ranging from 4/6 to 5/6; Madame Abel Chateaux, 4/- to 5/-; and Richmond, 3/6 to 4/-; Lillies also rose in value, L. longidormum (Harrisii) to 5/6; L. lancifolium rubrum to 3/-; and Guernsey Richardia, 4/- to 5/-. Small bunches of Michaelmas Daisies realised between 2d. and 4d., and large between 4d. and 8d.

Business in the fruit market was quieter, and while prices were not much changed the tendency was easier, especially for Apples. The variety Delicious were round 13/- per case; Jonathan, 12/6; best, 14/-; McIntosh Red, 13/-; Wealthy, 8/- to 10/-; and King David, 10/6 to 13/-. Greening, Baldwin and York Imperials were worth 30/- per barrel; Canadian Kings, 36/-; Ben Davis, 21/- to 30/-; Wealthy, 24/- to 29/-; and McIntosh Red, 38/- to 43/-. English Apples (Bramley's Seedling and Lane's Prince Albert) made 8/- per half-barrel. Jamaica Oranges realised 21/-, while South African brands varied from 26/- to 30/-. Fewer varieties of Pears were on sale, dealings being restricted to Duchess and Autumn Nells, at 12/- to 13/-, and Winter Nells, at 16/- to 17/6. Grape Fruit realised from 24/- to 38/-; Malaya Lemons, 420's 22/-, 300's 10/-; Tunis Dates, 9/- to 11/- per dozen boxes; and Smyrna Figs, 11d. to 1/-, Dutch Alicante Grapes were cheaper at 5/- to 8/- per basket, but Scotch, English and Guernsey Grapes kept steady round the previous week's values.

TRADE NOTES.

As several inquiries have reached us concerning calcium cyanide we are authorised to state that Messrs. George Monro, Ltd., Covent Garden, are the sole distributing agents for this fumigant in the British Isles.

MR. WILLIAM KELWAY, only son of the late James Kelway (the founder of the firm of Messrs. Kelway and Son), who has been connected with the firm for upwards of seventy years, at first with his father, then as sole proprietor, and until recently in partnership with his eldest son James, has decided, being now eighty-five years of age, to retire from business. The partnership heretofore subsisting between Mr. William Kelway, of Brooklands, Langport, in the county of Somerset, and Mr. James Kelway, of Wearne Wyche, Langport, carrying on business as seed growers, merchants and agriculturists at Langport, under the style or firm of Kelway and Son, has been dissolved as from December 31, 1924, and Mr. James Kelway, who entered the firm in 1883, will carry on the business as sole proprietor under the style of Kelway and Son. All debts due to and owing by the late firm will be received and paid by Mr. James Kelway.

CATALOGUES RECEIVED.

WILLIAM FELL AND CO., LTD., Hexham.—Forest trees, etc.
PERRY'S HARDY PLANT FARM, Enfield, Middlesex.—Hardy plants.
WM. WATSON AND SONS, LTD., Killiney Nurseries, Killiney, Co. Dublin.—Roses.
BEES, LTD., Liverpool.—Fruits, Roses, etc.
SAMUEL MCGREDY AND SON, Portadown, Northern Ireland.—Roses.
J. W. BARR, Daffodil Nurseries, Wimborne.—Bulbs.

Foreign.

MON. L. FERARD, 20, Rue de la Pépinière, Paris.—Plants.
JOHN SCHEEPERS, Inc., 522, Fifth Avenue, New York City.—Bulbs.
HERM. A. HESSE, Weener, Germany.—Plants.
CONVERS B. FLEU, JR., Germantown, Philadelphia, U.S.A.—Seeds of trees, fruits, Palms and hardy perennials.
M. HERB, Via Trivio 24-36, Naples, Italy.—Novelties.

ANSWERS TO CORRESPONDENTS.

BEGONIA FOLIAGE DAMPING. G. L. S. The damping in the leaves of your Begonia Orange King is not due to organic disease. Such trouble frequently arises from growing the plants in an excessively damp atmosphere without sufficient ventilation. Drip from a leaky roof would also be responsible for this trouble arising in Begonias. Keep the plant staging a little drier, be very careful not to water the plants excessively, and let the air circulate in the house, using the ventilators if necessary.

GERBERAS. J. E. A. G. These may be grown in any sunny, warm border with a southern aspect. Plant in a mixture of sandy loam and peat, with thorough drainage. In the warmer parts of this country they may be left out in such a position, if covered, in severe weather, with some light litter. Plants are readily raised from fresh seeds sown in spring in a little heat. Prick out the seedlings in pans, and pot them singly when large enough. The number to grow depends on the accommodation you have. Gerberas also do well in a cool greenhouse, but not in a warm one.

NAMES OF FRUIT. R. and Co. Apples: small green, Braddick's Nonpareil; large green, Wormsley Pippin. E. S. 1, Herefordshire Beefing; 2, Bess Pool; 3, Round Winter Nonesuch; 4, Colonel Vaughan; 5, Claygate Pearmain; 6, Cullen; 7, King of the Pippins; 8, Lord Burghley; 9, Warner's King. A. W. G. 1, Blenheim Pippin; 2, Dumelow's Seedling (syn. Wellington); 3, Dartmouth Crab (syn. Hyslop). W. H. W. 1, Mrs. Barron; 2, The Queen; 3, Newton Wonder; 4, not recognised; 5, Lane's Prince Albert; 6, Small's Admirable; 7, Domino; 8, Winter Quarrenden; 9, Grenadier; 10, Hanwell Souring.

NAMES OF PLANTS. B. and S. Celastrus articulatus. W. S. 1, Bocconia cordata; 2, Dianthus species; send in flower; 3, Linaria vulgaris; 4, Corydalis thalictrifolia; 5, Saponaria officinalis; 6, Cotonaster applanata. S. O. Gentiana ornata. C. G. D. Sweden. Smilax aspera. A. F. E. We regret we have no means of identifying varieties of Dahlias.

PINKS INFESTED WITH APHIS.—K. S. H. The greenish insect is an aphid attacking the lower parts of the plant. When subjected to inspection the plants did not show the presence of many insects, and there certainly were not enough to account for the ill-effect observed on the plant. If such an ill-effect has been noticed it would be as well not to neglect other possible sources of damage, such as wrong cultural conditions. In order to kill the aphides that are present, when transplanting, dip the whole plant into the following solution: soft soap, 10 lb; nicotine, 4 ozs.; and water, 100 gallons; or, on a small scale, soft soap 1½ oz., nicotine 1 c.c., water 1 gallon. After dipping, allow the plants to drain for a quarter of an hour, then wash them in clean water and re-pot. This solution will not damage the roots. Fresh soil which has not been used before for Pinks or Carnations should be employed.

Communications Received.—N. P.—P. R. M.—W. J. L.—T. E. M.—W. D. S.—B. E. F.—T. E. P.—W. H. R.—W. C.—Wentworth—E. W. S.—J. F. L.—H. S. B.

GARDENING APPOINTMENTS.

Mr. R. E. Arnold, previously gardener at Cirencester Park, Cirencester, as gardener to Mr. and Mrs. Muir, at Kiftgate Court, Campden, Gloucester.

Mr. J. F. Lewis for the past two years gardener to Col. GEO. PHILIPPI, Crawley Court, Winchester, Hampshire, and previously two years gardener to the Rt. Hon. LORD MANNERS, Avon Tyrrell, near Christchurch, Hampshire, as gardener to Wm. ROYNER, Esq., Thorp Perrow, Bedale, Yorkshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. A. Williams, for the past twenty years gardener to the Rt. Hon. LORD STRATHEDEN AND CAMPBELL, at Hartrigg, Jedburgh, as gardener to JOSEPH PIKE, Esq., Barton Abbey, Steeple Aston, Oxfordshire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)



SUCCULENT PLANTS IN THE MEXICAN HOUSE, KEW.

Photo C. P. Raffill

THE Gardeners' Chronicle

No. 2028.—SATURDAY, NOVEMBER 7, 1925

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SUPPLEMENTARY ILLUSTRATION.

View in the Mexican House, Kew.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 43.7°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 4, 10 a.m. Bar. 30. Temp. 52°. Weather Sunny.

A hundred years of cultivation of an introduced plant disease of the Douglas Fir.* is generally a long enough period in which to judge of its quality. In the case of a long-lived tree, however, a century represents but a narrow span of time and hence it is not surprising that only now, just ninety-eight years after the introduction by Douglas of the North American Fir which bears his name (*Pseudotsuga Douglasii*), some of the weaknesses of this fine tree are beginning to be discovered. As sometimes happens with exotics, its behaviour remained or appeared to remain impeccable for many years after the Douglas Fir was introduced, and high hopes were founded upon its amenability to cultivation, rapidity of growth and immunity from disease. Nor indeed need these hopes

be abandoned; for where conditions—sufficiency of rainfall and fair fertility of soil—are suitable, the Douglas Fir makes rapid and imposing growth. But, as later experience has shown, the species has not the supple tolerance of varied conditions that makes the Corsican Pine, *Pinus Laricio* and the Larch so valuable for general planting. Since 1889 when Hartig first recorded signs of disease in the Douglas Fir, foresters and mycologists have kept a careful eye on the plantations of this tree. Both Hartig and other investigators attributed the not infrequent dying back of young shoots, which previously had been regarded as due to injury by frost, to the attack of a fungus—a species of *Phoma*. Subsequent observation confirmed the conclusion that the disease in question is of fungous origin, but ascribed it to the attack not of a species of *Phoma* but to a fungus of allied nature, *Phomopsis Pseudotsugae*. The most recent and thorough-going investigation of the disease by Dr. M. Wilson, Consulting Mycologist to the Forestry Commission confirms this conclusion and adds greatly to the knowledge of the life history of this most serious of the diseases which affect the Douglas Fir. Dr. Wilson, whose account of the disease is accompanied by an admirable series of illustrations, has found that the fungus produces two kinds of spores—those borne in pycnidia and also ascospores and he has cultivated both artificially. Two types of infection appear to take place in Nature. In one, it is the apex of a young shoot to which the fungus gains access. This mode of infection leads to the dying-back of the diseased shoot. In other cases, however, when a small lateral branch becomes infected, the fungus may extend into the main trunk and, spreading in all directions, give rise to a canker of the stem. In this latter case the stem, for example that of a young tree, may be completely ringed with the inevitable result that the tree dies. Inasmuch, however, as plants but rarely offer themselves as passive victims to fungous intruders, it may happen that callus-formation following up the wound made by the fungus is rapid and copious enough to heal the wound and ultimately to obliterate all trace of the canker. It would seem probable that infection may take place in one or two ways—either through a wound in the older parts of young stems or directly in the tissues of the tips of young stems which are not yet covered by a defensive corky layer. Perhaps the most interesting conclusion reached by Dr. Wilson is that the disease is a malady of youth. It is in the nursery and among young plantations that the majority of losses occur. As the trees grow older they "grow away" from the fungus. Hence, among protective measures, an important place must be given to the selection of the sites of nurseries for the Douglas Fir seedlings. They should be as far removed as possible from plantations of Douglas Fir in which the disease occurs. Another means of reducing the incidence of the disease is by more careful removal of side branches. Some pruning of young trees may be unavoidable, but since infection takes place very generally through wounds near the ground level it is advisable that the operation of pruning should be carried on with the minimum of damage to the trees. Finally Dr. Wilson points out that since the fungus lives as a saprophyte on the tree it has killed, such dead trees are centres for the periodical emission of vast numbers of spores, any one of which falling on "good ground" may infect, invade and even destroy the tree in which it has found harbourage.

The Mexican House, Kew.—The Supplementary illustration included in the present issue affords a view of the large Succulents growing in the Mexican House at Kew, one of the wings of the Temperate House or Winter Garden, which is the largest plant structure in the world, and cost about £60,000 to erect. The building as now completed, with its central division and the two octagons at either end, and the two wings forming the Mexican House and Himalayan House respectively, was designed by Mr. Decimus Burton, and the building operations were first commenced in 1860. The large central division was completed in 1862, but it was not until 1897 that the south wing, now known as the Mexican House, was erected, and the north wing or Himalayan House was added in 1899. The Mexican House is devoted to plants that require an intermediate temperature. Many of them are representatives of the Mexican flora, the south end being occupied with large Agaves, Opuntias, Cereus, Euphorbias, Aloes, and other Succulents which are planted out in the rockery. The supplementary illustration shows a portion of this particular rock garden in which the plants have made noble specimens. The rest of the house is devoted to the cultivation of plants of the sub-tropical regions of both hemispheres. Amongst the more ornamental members are such fine flowering shrubs as *Lagerstroemia indica*, *Brunfelsia calycina* and its varieties, Javanese *Rhododendrons*, *Alberta magna*, *Gardenia*, *Thunbergia*, *Strelitzia*, etc. Many interesting sub-tropical plants have fruited in this house, including the Tree Tomato, *Cyphomandra betacea*, the Mango, *Mangifera indica*; the Loquat, *Eriobotrya japonica*; one of the Papaws, *Carica cundinamarcaensis*; and the Granadilla.

Florists' Telegraph Delivery Association.—The British Unit of the Florists' Telegraph Delivery Association has become affiliated with the Chamber of Horticulture, and Mr. J. S. Brunton and Mr. S. M. Segar, Jurr., are representatives on the Council for that Association. At the annual Convention of the Association held at Atlanta, U.S.A., during the third week in October, Mr. C. Engelmann, a former president of the British Unit of the F.T.D.A., and now on a visit to the United States, offered the greetings of the British members and urged the Association to hold its meeting in 1927 in England. Mr. Engelmann was accorded a vote of thanks and asked to return to the British members the good will and fellowship of the Association in U.S.A. The President also advised him that a Committee will be formed to take up the matter of affecting world-wide organisation, as suggested by the British Unit.

Opening of Scottish Seed-testing Station.—The new seed-testing and registration station of the Board of Agriculture for Scotland which has been erected on the farm of East Craigs, Corstorphine—the land of which was acquired in 1920—was formally opened on Thursday, October 29, by Sir John Gilman, Secretary for Scotland. Sir Robert Greig presided over a large company which included representatives from the Society for Research in Plant Breeding, the Universities, the Agricultural Colleges, the City Council, Farmers' Union, Highland and Agricultural Society, Chamber of Agriculture, Seed and Nursery Trade Association, Seed Potato Trade Association, Corn and Agricultural Merchants' Association, National Institute of Agricultural Botany, Cambridge, and Department of Agriculture, Dublin. When introducing the Secretary for Scotland, the Chairman gave a brief history of the movement from its inception in Saxony in 1869, and said they could not have progressed as they had done in the organisation of the building if they had not been heartily supported by the farmers, seed merchants, and growers. Sir John Gilman said he could conceive of nothing which the Government could do and which could be really more helpful to agriculture and horticulture than a movement of this kind. Everyone who knew anything about the subject had come to realise that however good their land might be, however carefully they might work

*Forestry Commission Bulletin No. 6. The *Phomopsis* Disease of Conifers. Published by H.M. Stationery Office, London. Price 1.6 net.

it, however fully they manure it, all the effort and expenditure would be lost if they did not have good and proper seeds. It was a happy thing to know that not only had they in Scotland reached the present stage, but that their work was being co-ordinated with the work of other countries, as they had now arrived at a uniform method of testing, which in itself was a great advance and a great advantage. While it was very desirable that they should have pure seeds, they must go a step further and secure a pure strain. In Scotland they were very much interested in the improvement of their pastures, which were dependent of such plants as wild white Clover. He found from statistics that ten per cent. of the samples submitted to this centre in one year were not true, but contained a considerable admixture of something else. Of course it was ruled by supply and demand, and more people were asking for the commodity than could be supplied, but at the same time it remained true that the station was performing a valuable function when it told the user if he was getting full value for his money or not. He was sure that in this venture, supported as it was by the seedsmen, if there was co-operation and a wider interest than at present existed it would be of enormous advantage to agriculture as a whole. The laboratory played a large part, but it was essential that they should go beyond the laboratory and get into the fields and demonstrate to the farmers the practical results of their work. Mr. James Eider, Athelstamford, Haddington; Mr. J. Davidson, Saughton Mains, and Professor Montague Drummond, Glasgow University also spoke, and after the company had inspected the new buildings and witnessed the tests they were entertained to tea. The new station occupies an elevated site overlooking the Edinburgh-Glasgow road, and faces direct south towards the Pentlands. The front part of the building is two storied. On the lower floor are the offices, cloak-rooms, and canteen. In the upper storey are the caretaker's residence, a large Council room, and a commodious botanical laboratory fitted for dealing with the examination of large samples of agricultural and horticultural produce. Behind the main front buildings are the seed-testing laboratories, store room, potting sheds, and glass-house, while near at hand is a Potato store for the reception of samples submitted for registration. One laboratory is set apart for the determination of the purity of the samples, the other for the determination of the germination capacity of seeds; all the "germinators" are electrically heated and controlled, and the up-to-date appliances provided include a new temperature control invented by Messrs. Maclaren, Glasgow.

Property Acts, 1922 and 1924.—The Rt. Hon. Edward Wood, M.P., Minister of Agriculture and Fisheries, has appointed a Committee to advise on the following matters:—(1) The fee to be prescribed as payable to a steward of a manor, or to the Land Registrar, as the case may be, under Sections 129 (2) and (131) (2) of the Law of Property Act, 1922, on an endorsement on an assurance of a certificate as provided by Section 129 (2), (4) and (8) of the said Act. (2) The fee to be prescribed under Section 129 (6) of the said Act as payable to the steward of a manor on a certificate by him as to the payment of fines, reliefs, heriots, and fees payable in respect of any transaction and rents, including arrears, if any, as therein provided. (3) The fee to be prescribed under Section 131 (1) and (2) of the Law of Property Act, 1922, as payable to a steward of a manor or the Land Registrar, as the case may be, in respect of transactions effected after the commencement of the said Act. The Committee will consist of Sir C. Fortescue-Brickdale, Mr. H. W. Klocker, and Mr. C. G. May, together with Mr. P. W. Millard, and Mr. C. Wood-Hill, both of the Ministry of Agriculture. Sir C. Fortescue-Brickdale will be Chairman, and Miss R. Skene Smith, of the Ministry, Secretary of the Committee.

Mr. W. J. Bean.—The many friends of Mr. W. Jackson Bean, Curator of the Royal Gardens, Kew, will be delighted to know that Mr. Ernest

Moore, the artist, has included Mr. Bean's portrait among those of "Men of Yorkshire" he is exhibiting at Walker's Galleries, 118, New Bond Street. The exhibition includes portraits of twenty-eight famous Yorkshire men besides sketches of some of the beautiful Yorkshire dales, and will remain open until November 17.

Mr. George H. Head.—Long years ago the gardens at Fulwell Park, Twickenham, Middlesex, were among the most famous in the metropolitan district, but there came a period when their fame declined. But since King Manuel and Queen Augusta, of Portugal, have been in residence, very much has been done under the care of Mr. George H. Head to restore the horticultural fame of Fulwell Park. Mr. Head comes of a race of yeoman farmers and gardeners and with the definite intention of making his way as a gardener he entered the gardens at East Hill House, Ashford, where he remained for four years and laid the foundation of his horticultural knowledge. After a few years' experience



MR. G. H. HEAD.

in gardens in Kent and Sussex he entered service with Messrs. James Veitch and Sons, at their Chelsea Nursery, eventually receiving an appointment as foreman at Poltimore Park, Exeter, where Mr. Slade was then in charge of the gardens. It was at Poltimore that Mr. Head gained breadth of vision and became imbued with the desire to extend his knowledge by every means available. While at Poltimore he made the acquaintance of Mr. J. Coutts (now at Kew), then in charge of the gardens at Killerton, who gave the young man every possible assistance and encouragement. Mr. Head's first charge was at Kingsdon Manor, Taunton, where he was blessed with kindly, interested and encouraging employers and made numerous alterations and improvements. While at Taunton he commenced exhibiting and won numerous prizes for Chrysanthemums, etc. He stayed at Kingsdon Manor for ten years, and during that period gave numerous lectures in the west country. He was appointed to the charge of Fulwell Park gardens in 1914, and has had the satisfaction of redeeming the place from the neglect into which it had fallen, reconstructing the glass department, designing and planting a Rose garden containing over two thousand dwarf Roses, making new herbaceous borders and developing the water garden. Fulwell Park contains many fine old trees and these are carefully preserved. Mr. Head's abundant energy finds numerous outlets; he is a good lecturer and a frequent writer on horticultural

topics; chairman of the local Allotment and Gardeners' Association, and a co-opted member of the local Allotment Managers' Committee. He is very fond of music, a chorister and a campanologist of repute, having scored a number of peals of 5,000 changes.

Proposed Sugar Beet Factory at Leighton Buzzard.—It is proposed to erect a Sugar Beet factory on a site provided by Mr. Anthony Rothschild, at Leighton Buzzard. The cost of the factory is estimated at about half-a-million pounds and, if erected soon, will be ready to take next year's Sugar Beet crop grown in the district.

Cork Industry in Spain.—The annual output of Cork bark in Spain is estimated at between sixty and seventy million tons, of a value of sixteen million pesetas (£1=25.22½ pesetas par). The cork industry was established in the province of Gerona in the beginning of the nineteenth century and is thus one of the oldest in the country. The best quality cork bark is largely used in making corks for the bottling of sparkling wines and for this quality there is a considerable demand, the prices remaining high. Cork of poor quality and waste is largely used in the manufacture of linoleum, and the preparation of cork boards for insulation purposes. Exports of the manufactured boards to England, Belgium and the United States of America have increased considerably in recent years. There is now a linoleum factory in Madrid, and this will absorb a considerable amount of the waste cork which has hitherto been exported.

Legacies to Gardeners.—Miss Frances Jane Sparks, of Bincombe House, Crewkerne, Somersetshire who died on August 20, left £500 to her gardener, Mr. George Collins.—The late Col. John Edward Mellor, of Tan-y-Bryn, Abergele, Denbighshire, bequeathed £200 to his gardener, Mr. Charles Price.—Sir Robert Appleby Bartram, of Thornhill Park, Sunderland, who died at Harrogate on August 8, left a legacy of £100 to his gardener, Mr. James Bickerton, and he also bequeathed £100 to the widow of his late gardener, William Prest.—Mrs. Amy Levin, of Angle House, East Molesey, who died on March 18 last, bequeathed £50 to her gardener, Mr. Thomas Shand.—Miss Elizabeth Ann Vaughan, of Royston, left a legacy of £50 to her gardener, Mr. Herbert William Johnson.

Tax on Flowers imported into Germany.—German flower salesmen are much concerned over the imposition of a tax of three marks per kilo on flowers entering Germany, the new tax making it almost impossible to trade with French growers. A deputation of some thirty-five salesmen, representing different towns in Germany, recently visited flower-growing districts in Italy and France to ask the wholesale florists in those parts to put pressure on their Governments to induce the German authorities to reduce the duty. On October 14 the deputation visited Ollioules and were received by the Mayor and an influential committee of wholesale florists and growers. Apparently the interview was a very cordial one, for after a champagne toast the deputation visited the nurseries of several of the growers and inspected the works of the largest dyers of immortelles (*Gnaphaliums*) in the district.

American Rose Society.—This American floral society continues to make progress, but the membership is not yet equal to that of our National Rose Society. The membership to date is 4,342, and the increase was larger last year than in any previous twelve months. The Society's income for the past year was \$13,815.80, and it has a balance in hand of \$1,395.36. At the annual meeting a sub-committee was appointed to co-operate with the people of Baltimore in their plan to create a new Rose garden as a leading attraction of the Baltimore park system. It was announced that \$100 had been offered as a prize for the best plan of a small Rose garden, and this offer was supplemented at the meeting by two sums of \$100 and \$50 respectively.

Danish Garden Craft.—For purposes of propaganda at the recent Paris Exhibition of Decorative Arts, Danish horticulturists and landscape gardeners united to produce a very attractive quarto brochure, entitled *Haverkunst*, on the subject of the development of garden design in Denmark during the past decade. It would seem that during this period the cult of the small villa garden has enormously increased, the ideal generally followed being the sound one of bringing house and garden into harmony. The brochure is illustrated with a number of excellent photographs of modern Danish gardens, mostly of a size to admit of generous treatment. They are a little formal for English taste, with too many straight-cut grass edges, and wide, paved paths, but the grass lawn has attained a considerable degree of popularity in Denmark, and some very fine swards are shown in the illustrations. In the introduction to the brochure attention is called to the fact that the note chiefly struck by Danish modern gardens is that of simplicity. This is amply borne out by the examples chosen, which are strikingly free from any tendency to ostentation or pretentiousness.

National Dahlia Society's Annual Meeting.—The Annual Meeting of the National Dahlia Society will be held on Tuesday, November 17, 1925, at 3 p.m., in the Royal Horticultural Hall, Vincent Square, Westminster. In addition to the usual business the members will be invited to consider the following addition to By-law No. 3 "The Committee may, in their discretion, elect as Honorary Members foreign Dahlia experts whom it is especially desired to honour." Many of the modern varieties of Dahlias are splendid plants for the garden, and the Society is deserving of support in its efforts to improve and popularise the flower.

Jubilee of a Dutch Nursery.—On the 1st of November the 50-years' jubilee was celebrated of the well-known Amsterdam nursery firm of Kauffmann. The founder of the firm, who took part in the Franco-Prussian war of 1870-71, went to Holland at the close of hostilities and took a subordinate position with an Amsterdam firm of nurserymen, shortly afterwards setting up for himself in a very small way. By dint of hard and unceasing labour, and later with the help of his eldest son, he built up an excellent business, from which he retired nominally in 1907; but being still full of energy and vigour, he then went to the assistance of his younger son, who founded a nursery and florists' business on the Weesperzijde, near Duivendrecht. Mr. Kauffmann has ample reason to look back with satisfaction upon his fifty years of successful endeavour and achievement.

Appointments for the Ensuing Week.—Monday, November 9: Gloucestershire Root, Fruit and Grain Society's Show; United Horticultural Benefit and Provident Society's meeting. Tuesday, November 10: Brighton, Hove and Sussex Horticultural Society's show (3 days); Jersey Gardeners' Society's meeting. Wednesday, November 11: Wimbledon and District Gardeners' Mutual Improvement Society's show; Nottingham and Notts. Chrysanthemum Society's show (3 days); Bristol Horticultural and Chrysanthemum Society's Show (2 days); Mitcham, Tooting and District Horticultural Society's show; Bath Gardeners' Society's meeting; Faversham and District Chrysanthemum Association's show (2 days); Lancaster and District Horticultural Association's show. Thursday, November 12: Sheffield Chrysanthemum Society's show (3 days); Derbyshire Horticultural Association's show (3 days); Hitchin Chrysanthemum Society's show. Friday, November 13: Dunfermline Horticultural Society's show (2 days); Newcastle and District Horticultural Mutual Improvement Society's show (2 days); Leicester and Leicestershire Chrysanthemum and Fruit Society's show (2 days); Orchid Club meets; Blackburn and District Horticultural Society's meeting and lecture; Royal Horticultural Society of Ireland Council meeting. Saturday, November 14: Burton-on-Trent and Shobnall Chrysanthemum Society's show.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Churra Poonji, Khasia Hills, August 28, 1850.*—I was greatly pleased with your remarks on the influence of hot-house growth, etc., on the colours, etc., of plants in the *Gard. Chron.*, but do not quite follow them in nature. I am sure that we not only spoil colours but organs by a choking system of cultivation; and yet both here and in Sikkim our richest coloured flowers are produced in the deepest woods, expand and die, though the sun often does not appear for one minute for ten, fifteen, and even twenty-six days in succession! Free air of course they have plenty, and a moderate temperature. The colours of the *Dendrobia* and *Coelogynes* and *Vandas* are as bright at home as here, from the sunless climate common to both localities: whereas I suppose your South-American, Mexican, etc. Orchids, are far better supplied

is no check to this by a temporary extreme of cold in the night; for the twelve hours of day the thermometer will range between 68° and 70° for eleven of them, and rise to 82° during the twelfth. At night it is invariably between 64° and 66°. The maximum and minimum thermometers give the mean of 64° and 82° for that of the twenty-four hours; the mean of the whole twenty-four hours is, of course, widely different. I quite agree with you that we have no known means of ascertaining either the amount of heat a plant requires or gets. I bury a thermometer two feet deep wherever I go; its fluctuations are never diurnal; one-tenth, or so, every three days, is perhaps the average extreme. I thus get very closely the decrements of temperature for small elevations, and some data for bottom heat. The mean temperature of the air I have never attained at any depth down to eleven feet; and the idea that it is to be had at

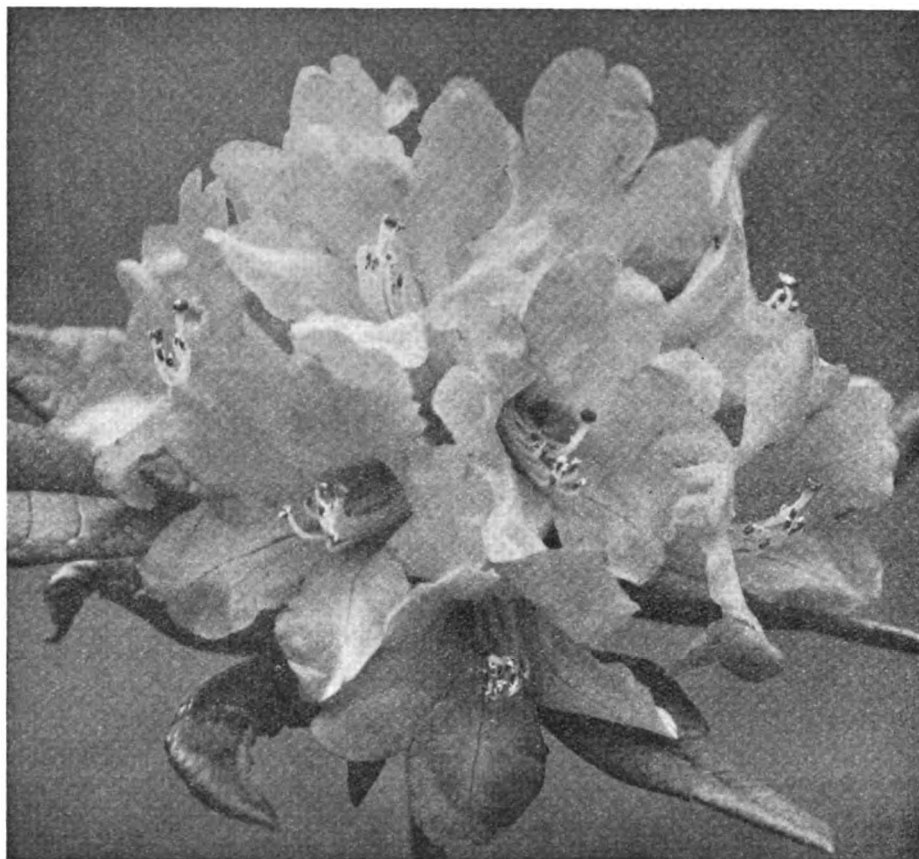


FIG. 153.—RHODODENDRON DELAVAYI

(see p. 371).

with sunlight in their native woods than in England, and hence degenerate. Here 500 inches (41 feet and more) of rain fall annually; 130 fell last month alone, 35 have fallen in 24 hours, and 10 a-day for 16 days in succession. I have compared the rain gauges and used both my own, too (a 2-inch and a 5-inch), and it is a true bill. The temperature of Churra is very uniform during the summer month, 60° to 80°, and for days together, 64° to 70° have been the extremes of this month. Often, however, when the mists clear, the temperature rises to 82° in a few minutes; and in some parts of the station (altitude 4,000 feet) hot gusts of air from the gulleys and plains below are driven across the station, and raise the thermometer 6° or 8° in a few seconds. Hence here, as in all hill stations, I find the mean always too high, if taken from the maximum and minimum thermometers. Very transient strong heat in the day (of 10° above the average) and lasting but for a few minutes, is a common phenomenon; but there

a few feet in the tropics is quite erroneous. The temperature of the plant (i.e., of its juices) is, I find, materially dependent on that of the soil at its spongioles; and a good large unripe Shaddock on the tree will maintain the same temperature (in the plains of India) with the thermometer in the air at mid-day at 110° and at midnight at 68°; the black bulb in the sun at 150°, and radiating thermometer at night at 58°, with plants and fruits, I need not say, fully exposed to all their vicissitudes. I wish I could say that I could detect the smallest influence on vegetation in diminished atmospheric pressure. *J. D. Hooker, Gard. Chron., November 9, 1850.*

Publications Received.—*Practical Fruit Growing.* By J. W. Morton. Ernest Benn, Ltd., 8, Bouverie Street, E.C. 4. Price 10/6 net. *Insecticides, Fungicides, and Weed Killers.* By E. Bourcart. Second edition. Scott, Greenwood and Son, 8, Broadway, Ludgate, E.C. 4. Price 15/- net.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Zygopetalum.—The partially developed pseudo-bulbs of *Zygopetalum Mackayi* are sending out flower spikes, and from now onwards until the flowering season is over extra care must be taken in watering the roots, for an excess of moisture at this stage may cause the leaves to become spotted. Water should only be afforded when the compost is dry, and sufficient should be given to soak the materials thoroughly; the compost should be allowed to become dry before applying moisture again. *Z. crinitum*, *Z. Clayi*, *Z. Perrenoudii*, and others of this type should be afforded similar treatment until the growth of the new pseudo-bulb is completed. These plants thrive well in a moist, shady position in a house having an intermediate temperature. The dwarf-growing kinds, which include such as *Z. Balliac*, *Z. rostratum*, and *Z. Roeblingianum*, should be afforded a similar position in the house. The surface layer of Sphagnum-moss should be sprinkled frequently to keep it in a green, healthy condition.

Re-potting.—Plants of the *Bollea* section of *Zygopetalum*, together with *Chondrorhyncha Caestertonii* and *C. fimbriata*, are sending out new roots, and the necessary re-potting or re-surfacing may be done now. Pots or pans are the most suitable receptacles for these plants, and a rooting medium of *Osmunda-fibre* and Sphagnum-moss cut into short portions with a sprinkling of crushed crocks is suitable. The species *Z. Gauteri* and *Z. maxillare* have a rambling habit, and are not suited to growing in pots or pans. They may be fixed on a portion of the stem of a Tree-Fern. If necessary, the rooting space may be extended by wiring another piece of stem on the top of the old block. The roots should be kept moist at all times.

Cypripedium.—*C. niveum*, *C. Godefroyae*, *C. bellatulum*, and many of their hybrids should receive very careful treatment during the dull winter months. Having thick, fleshy leaves, the plants do not require so much moisture at the roots as other *Cypripediums*. The compost should be allowed to become dry before water is applied, when the receptacle may be immersed nearly to the rim, or the water poured around the outer edges of the soil, the object being to prevent moisture lodging in the axils of the leaves.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pymford Court, Woking, Surrey.

Dahlias.—The tubers of Dahlias should now be lifted, and it is a good plan to stand them in a sheltered position with a little dry Bracken around them, to enable them to gradually ripen off before finally storing them for the winter. Many gardeners find a difficulty in storing the tubers satisfactorily, as the position chosen must be frost-free—yet it is essential that it should be cool, or etiolated growth is forced early in the year. An excellent means of storing is in coal-ashes in a protected position out-of-doors.

Acanthus.—I have never seen this noble plant throw up its aristocratic spikes with such freedom as in the present season. From August till now they have been highly attractive objects in the green garden, where, in association with evergreen shrubs, the larger Ferns and a few herbaceous plants, they stand up like sentinels of the colony, and their lack of brilliance is more than compensated in the handsomeness of the foliage and exquisite arrangement of the flowers. Although it takes

longer to establish them than most hardy perennials they grow very vigorously when once established, and their cultivation presents no difficulty. They dislike interference, therefore, lifting and dividing should only be done when signs of exhaustion are apparent. If increase of stock is desired, the most prolific means of propagation is by root cuttings inserted at this season.

Roses.—The growth and flowering of Roses have been so persistent and continuous this season that very little planting has been done in October. With bulb-planting and spring-bedding finished, however, attention will be given to the planting of other subjects. Amongst these, Roses should be given first place, as the sooner they are put in position now the better their chances of giving satisfaction during the next flowering season. Owing to the heavy rainfalls of October, the condition of clay soils is not all that could be desired, but it is not wise to defer planting too long, and if the ground is too wet, an addition of dry soil to place immediately around the roots is helpful. This facilitates firm planting, and enables the planter to complete his work under favourable conditions. From the bewildering number of varieties now available, it is not easy to choose the best, as in many cases this is really a matter of opinion. I suggest, however, that the following thirty varieties are first-class and well worth growing:—H. P.: Capt. Hayward, red; Frau Karl Druschki, white; Mrs. John Laing, pink; Ulrich Brunner, cherry-red; Hugh Dickson, crimson-scarlet; General Jacqueminot, crimson. T.: Lady Hillingdon, yellow; Lady Roberts, deep apricot; Mrs. Herbert Stevens, white; Marie Van Houtte, canary-yellow; Souvenir de Catherine Guillot, coral-red; General Schablikine, coppery-rose. H. T.: Betty Upchurch, salmon-pink; Courtney Page, scarlet-crimson; Covent Garden, deep crimson; Hoosier Beauty, glowing crimson; Lady Ashtown, pale pink; Lady Pirrie, coppery-salmon; Mabel Mercer, rich, golden-yellow; Mrs. Courtney Page, cerise with carmine shading; K. of K., dazzling scarlet; Madame Abel Chatenay, rosy-carmine; General McArthur, scarlet; Hadley, velvety-crimson. Pernetiana: Los Angeles, flame-pink; Madame Ed. Herriot, coral-pink; Mrs. Wemyss Quin, pale yellow; Padre, coppery-red; Souvenir de Claudius Pernet, yellow; and The Queen Alexandra Rose, vermilion, shaded old gold.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Stove Flowering Plants—Plumbago rosea and P. coccinea.—These beautiful winter-flowering plants are now producing their flower spikes, and as the flowers open the atmosphere of houses containing the plants should be kept slightly drier and cooler than hitherto in order to preserve colour and substance in the flowers. A night temperature of 55° to 60° will be warm enough. Care should be taken, however, that the plants do not become too dry at the roots.

Poinsettia (Euphorbia pulcherrima).—The treatment of this showy, winter-flowering plant should be directed towards the production of large and highly-coloured bracts, and when these are being formed the plants may, with advantage, be fed on frequent occasions with well-diluted liquid manure and soot-water, warmed to the temperature of the house in which the plants are growing; the maximum available light should be allowed to reach the plants, staging them as near to the roof glass as possible. A night temperature of 60° to 65° and a moderately-moist atmosphere may be maintained until the bracts are fully developed, after which the atmospheric conditions should be somewhat cooler and drier.

Euphorbia jacquiniæflora.—At this time of year, and especially during a spell of dull weather when perhaps extra fire heat has to

be used to maintain the requisite temperatures, these plants are apt to grow rather rapidly. Efforts should be made to get this late growth matured and firm, an essential condition to the successful flowering of the plants. They should be exposed to all available sunlight, and a drier atmosphere from now and throughout the flowering stage should be maintained. Feed the plants as advised for the Poinsettias until half the flowers have developed.

Saintpaulia ionantha.—The Californian Violet deserves to be more widely grown than it is. When well grown the plant produces its pretty, blue flowers, with their golden anthers, in profusion, presenting in winter a most attractive appearance. Whilst the plant is easily raised from seeds, the stock may readily be increased by leaf propagation, inserting the leaves in sandy soil in pots or pans and plunging these in a hot-bed under a hand-light. This method of propagation is to be preferred, since the best plants only need be selected for perpetuation. It requires a peaty, sandy soil, and should be grown in small pots—those of four-and-a-half-inches diameter being large enough for the strongest plants—in a moist atmosphere in a stove or warm greenhouse.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Pruning and Tying.—The work of pruning and training fruit trees may shortly be commenced. Sweet Cherries are, as rule, the first trees to drop their leaves, giving an opportunity to commence their pruning at an early date. The shoots of old trees trained on walls may be spurred back to three or four buds; the latter being closely set on the branch keep the spurs neat for many years. Cut out dead spurs or branches that show signs of dying and train young shoots in the places of the latter. All old ties or shreds should be removed and burnt and fresh ties and shreds substituted. Young trees that have more wall space to cover may have the leading shoots trained in at equal distances apart. I do not advise shortening these leading growths unless they are very strong and taking the strength from the lesser ones; it is safer to disbud the trees in the summer. If the trees have made side shoots or outstanding growths these should be pruned in the same manner as advised for the older trees, but not quite so hard, as it may prevent the trees from making good, fruiting spurs. The treatment of bush trees should be the same as advised for the older trees on walls and the leading growths regulated according to the room available.

Morello Cherries.—When the leaves have fallen from these trees and time can be spared, the work of pruning and training the shoots should be undertaken before very cold weather sets in. Unfasten the shoots from the walls, and spray the latter with nicotine soap according to the strength advised by the makers. Prune the trees of all useless wood and then put them back in their position, tying the shoots about three inches apart, similar to tying in a Peach tree, only a little closer.

Plum Trees on Walls.—If the spurs have grown out from the face of the wall, and are getting out of order, cut them back to within an inch or so of the leading branches. Next year they will make new growths and form fresh spurs. The shoots of younger trees may be pruned to two or three buds from the base of the shoots, all old, fruitless wood cut away, and young growths trained in their places. All old ties should be cut away and new ones, whether of string or shreds, substituted. The members of the Gage family fruit best on young wood trained in annually, and although this method is not conducive to neat training cropping qualities must be considered.

The Fruit Room.—All Apples should be looked over and any decayed fruits removed and specked ones put out for immediate use

before they decay too much. Most of the Apples affected with bitter pit are over, for this disease attacks early and mid-season varieties chiefly.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM, Wormley, Bury, Broxbourne, Herts.

Peaches and Nectarines.—Where Peach and Nectarine trees are to be planted to form permanent borders the work should be pushed forward and completed as quickly as possible. In removing old, useless trees from existing houses, see that the old borders are taken out, the drainage attended to, and a new border made. Incorporate plenty of mortar rubble with the compost and make the latter quite firm when planting. Keep the layers of roots well apart and trim all rough surfaces smoothly and cleanly with a sharp knife. Plant very firmly. Sling the main branches to the trellis to keep them from breaking, but do not attempt any training of the shoots until the trees have had time to settle. In the case of newly erected houses, the varieties chosen should be considered to meet the requirements of the establishment, divided into early, medium, and late sections. In some establishments a large quantity of fruit is required at a certain season and the gardener must then plant and time his crop accordingly. The following are reliable varieties for culture under glass and suitable for forming a good succession:—Peaches: Alexander, Hale's Early, Duke of York, Peregrine, Crimson Galande, Dagmar, Dymond, Barrington, Bellegarde, Sea Eagle and Walburton Admirable. Nectarines: Cardinal, Early Rivers, John Rivers, Lord Napier, Dryden, Stanwick Elruge, Rivers' Orange, Humboldt, Pine Apple and Spencer. Should the new compost be on the dry side give it a thorough soaking with clear water. Keep the ventilators wide open on all suitable occasions. The roots will speedily push forth into the new soil and the trees start into growth next season with scarcely a check. Great care must be taken to see that no pests, such as brown scale, are on the trees. If present they should be removed by sponging the wood with paraffin emulsion.

Late Peach House.—So soon as the last fruits are picked go over and carefully prune the trees to admit all possible light and air to ripen the fruiting wood for next season's crop. Give the borders a thorough soaking with water if they have been allowed to become dry and keep the house well ventilated both day and night whenever the weather is favourable.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

French Beans.—To keep up further and continuous supplies of French Beans fit for use from now onwards, sowings should be made in pots in greenhouses. See that the pots are well-drained and half-filled with a good, open compost. Use eight-inch pots, and sow on an average about six seeds in each pot. So soon as germination takes place, water the soil freely and keep the plants growing in a temperature of 60° to 65°. When the plants have made their first rough leaves they should be top-dressed and a few twigs placed in each pot to support them. Avoid sudden changes of temperature during cold spells. Keep a fairly moist atmosphere in the house and syringe the plants on all favourable occasions to prevent attacks of red spider. Make sowings fortnightly if continuous supplies are needed.

Horse Radish.—Sufficient supplies of Horse Radish should be lifted and stored in readiness for use during bad weather. When lifting for this purpose the opportunity may be taken of getting sufficient thongs to make a fresh plantation. In some gardens the beds of Horse Radish are not disturbed for years, but better

quality roots will be obtained if fresh plots are made in alternate years. When lifting, store all the large roots for use as required, cutting off enough thongs to plant the new bed. Make the thongs about eight-inches or nine-inches long, and cut them evenly across. Plant in rows about one-and-a-half-feet apart, and allow the thongs a distance of one-foot between each. The soil should have been previously well-trenched and a liberal amount of farmyard manures incorporated with it.

Winter Greens.—Examine all crops of Winter Greens in favourable weather and remove all dead and decaying leaves. This will admit more light and air to the plants. Hoe the ground when it is in a fit condition, raking off all large weeds.

Frames on Hot-bed.—The frames and lights used for covering hot-beds should be cleansed thoroughly. Fallen tree leaves in the pleasure

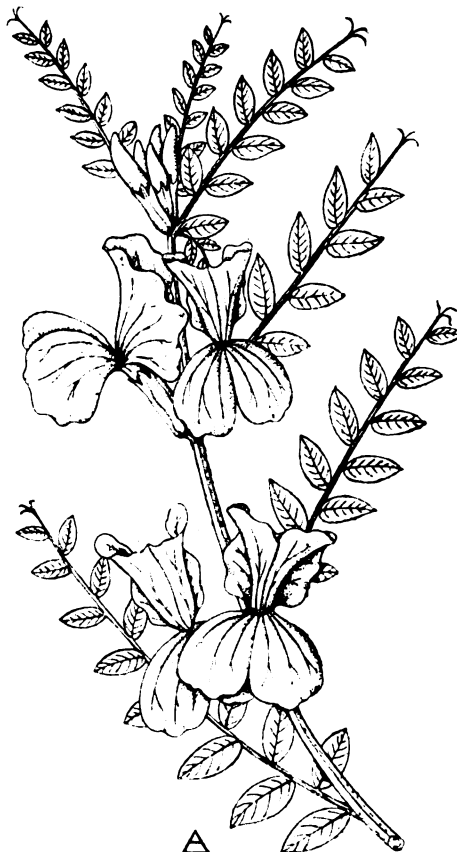


FIG. 154.—VICIA PYRENAICA
(see p. 366).

grounds should be swept up and carted to some convenient place ready to make hot-beds for the forcing of early vegetables and salads. Do not tip all the leaves into one large heap; they will be better in a few smaller heaps until they are required.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Roses.—The planting of Roses may now be undertaken on the first suitable occasion. Spring planting may be resorted to so late as mid-March, but the best results are invariably to be had from the November planting of Roses. In planting Roses it is important to make the soil thoroughly firm about the roots; therefore in wet weather planting operations on heavy, clay soils should be suspended, as it is unwise to press the soil under such conditions. The seat of union of bud and stock should be placed not less than one inch to one-and-a-half inch below the soil surface. The distance the Roses are to be set apart in the bed must

be regulated by the habit and nature of growth of the variety. For those of robust growth a distance of from twenty inches to twenty-four inches from plant to plant is suitable, but some H.T.'s of recent introduction will not require more than sixteen inches from plant to plant.

Standard Roses.—Newly-planted [standard] Roses should be given a good support and it may be placed in position when the hole is ready for the reception of the roots. It is also wise, in exposed districts, to give standard Roses some protection at the place where the bud has been worked on the stock; this may be done by tying some litters materials, such as dried Bracken Fern or straw, around the stem at this part. The protective material should be removed later when all danger of severe and prolonged frosts is over. The preparation of soils for all sorts of Roses grown on the Briar stock is similar, and deep cultivation is of the first importance. The ground should be worked to a depth of at least two spits and the subsoil at this depth broken up with a fork, mixing well decayed farmyard manure with it. Enrichment of soil for all Roses is next in importance to deep cultivation for their well being, and this cannot be done better than by working in liberal quantities of farmyard manure when preparing the bed. Bones, coarse and fine, may be added with advantage, also wood ash from May trees, this latter being of exceptional value to Roses in soils of a light texture. Examine newly planted Roses from time to time and make firm in the ground any that may have worked loose at the collar.

Rhubarb.—The present is a suitable time to introduce a few roots of Rhubarb to a warm structure if sticks are required for use at Christmas or the first week in January. A warm cellar having a temperature of 50° is a suitable place for forcing Rhubarb. Lift the plants with as much soil adhering to the stools as possible and pack plenty of freshly fallen tree leaves firmly around each clump.

Late Cauliflowers.—Many fine heads of Cauliflowers are now forming and will require slight protection from heavy rains. This may be given by turring over the outer leaves to throw off the water. Should severe frost threaten plants with curds approaching maturity, they may be lifted and replanted in a deep, cold frame.

WILD GARDEN.

LINARIA REPENS.

A PLANT of *Linaria repens alba* in my garden where it found its way as a small plant under another name, but which is about to be removed to a position where it may indulge its spreading habit, reminds me that it is well that growers should be acquainted with the habit of the plant. It is not to be recommended for all places.

The typical *L. repens* has purple flowers and is of semi-erect habit with somewhat graceful foliage and small flowers. It has never gained much favour, but the white variety, *alba*, appeared some years ago as a charming plant with flowers reminding one of the *Lily-of-the-Valley*. The reminder, if such it can be called, is a very vague one indeed, and calls for an effort of imagination to realise. Yet this white variety is unmistakably prettier than the type and a good sized plant with its narrow, graceful foliage and its many small white flowers, as a bush about a couple of feet or less in height is very attractive. It has the spreading habit of the typical *L. repens* and runs too freely to admit it on the rock garden. Its role is in the wild or semi-wild garden, where it can spread at will and where its graceful appearance can be enjoyed without the danger of its harming choicer plants. *S. Arnott.*

ALPINE GARDEN.

VICIA PYRENAICA.

THIS is a charming little rock plant (Fig. 154) and although at times somewhat aggressive it is easily kept in bounds. Of dwarf, prostrate habit, only a few inches high, it spreads by means of underground stems and forms a rich green carpet. In the axils of the leaves the good sized, very purple flowers are produced in pairs, keeping up a display for a long time. As its name implies it is a native of the Pyrenees, but it is an old inhabitant of our gardens, growing well either in the open border or on a rocky ledge in the rock garden.

The genus *Vicia* contains few plants of much garden value, although our native species, *V. Cracca* and *V. sylvatica*, look pretty when straggling over low bushes and bearing masses of pale lilac flowers. One other worth growing for its silvery foliage alone, is *V. persica* var. *stenophylla*, which forms a bushy plant some eight inches or nine inches high. *W. Irving*.

JABOROSA INTEGRIFOLIA.

THIS rare garden plant bearing the somewhat unattractive name of *Jaborosa integrifolia*, comes to us from the Andes. It is a very interesting plant when in flower, but I cannot with any feeling of confidence recommend it for planting in any but really warm gardens and in sheltered, sunny positions, such as on rockwork in light, well-drained soil and fully exposed to the sun.

Yet it is so distinct that one will feel justified in suggesting a trial of this *Jaborosa*, although I have to confess that my plant died after about two years. Probably had the winters been more severe I would have lost it earlier; a sheet of glass ward off excessive rainfall. It is a striking, though not showy plant, dwarf in habit and with creeping stems with rather big leaves and striking starry flowers of greenish-white with long tubes. The plant is rare even in nurseries and should be sought for among the establishments of the South of England or Ireland where the plant has a better chance of surviving than in the colder north. I should advise purchasing *J. integrifolia* in a pot, if possible, and planting it in the spring.

ERODIUM CHRYSANTHUM.

ERODIUM chrysanthum has long been a coveted plant in the rock garden, but its comparative rarity shows that it possesses some feature or features which render it of less value than many inferior flowers. It is a plant of pre-eminent loveliness, but it calls for special care to induce it to flourish in gardens. Time after time, experts have sounded its praises and given minute details regarding its cultivation. Sometimes these directions have been diametrically opposed to each other. As a case in point the writer once visited a famous home of hardy flowers, the owner of which showed *E. chrysanthum* with great pride growing in a shady crevice. This, he asserted, was the only way by which it could be induced to succeed. Other and more recent authorities strongly advocate growing it in fullest sun, in a dry soil, and preserved from excessive wet in winter. This appears, from my experience to be the most satisfactory way of treating this choice plant from Mt. Parnassus and the adjoining regions.

It has silvery, feathery leaves and branching heads of good-sized, sulphur-yellow flowers.

It is said to produce seeds, and certainly this is the best method of raising plants, although cuttings and even division may be practised with large plants. The difficulty of procuring seeds is that the two sexes are on different plants, and unless both are secured fertile seeds will not be produced. I have not been able to secure seeds from this exquisite and rare *Erodium*. *S. Arnott*.

BULB GARDEN.

LESSER-GROWN BULBOUS PLANTS.

(Continued from p. 346.)

CRINUM.

THERE are several species of this handsome Amaryllidaceous genus which are quite hardy in this country if given the right conditions and positions. It is preferable to give them sunny positions at the foot of a wall and it is essential that they should have a well-drained border and good depth of soil. Deep planting should be practised so that the bulbs remain out of the reach of frost, and if the soil is of a friable nature a covering of ten or twelve inches is not too much.

Unlike many bulbs of a similar type *Crinums* flower when in full foliage towards the end of the summer, and their beautiful wax-like flowers make them peculiarly attractive subjects. They need abundance of moisture and should be watered copiously in dry weather. Probably this factor of water is more important in the production of flowers than that of ripening the bulb. It is noticeable that plants have flowered with unusual freedom this year, and this may be partly due to the heavy rainfall of last year after midsummer.

C. capense (*C. longifolium*) and its varieties are most frequently grown, but *C. Powellii* album, white, and *C. Moorei*, with handsome bluish-rose flowers, are excellent, and quite easily grown in sheltered positions.

In very severe winters it may be necessary to cover with dry material to prevent frost penetrating to the bulb, but in ordinary winters even this is not necessary. Planting should be done in May so that the plants become established by a season's growth to help them through the winter.

ZEPHYANTHES CANDIDA.

THIS is a fine, hardy bulb producing a profusion of white, graceful, *Crocus*-like flowers in late summer. All that it requires is a sunny position, a fairly rich soil and plenty of moisture, and it may be left undisturbed for several years. *W. Auton*.

(to be continued.)

MONTBRETIAS.

FOR making a bright display in the plant border all through the autumn there are few plants which are superior to the *Montbretia*, whose long, beautiful green leaves are interspersed with the gorgeous spikes of flowers of various shades, according to the variety.

To obtain fine spikes for filling glasses special cultural attention is necessary. Old clumps that have occupied the same piece of ground for several years will not produce flowers to be admired on the border or in the room. Now is the time to replant the corms. Dig them up, every one, large and small, and divide them carefully. Discard the small ones, select the best roots and replant them a few inches apart each way, mixing a liberal amount of fresh soil (to which a little bone meal has been added) among the roots. Make the soil fairly firm with the fingers as the corm is put in position. Preserve the foliage as much as possible as it helps to sustain the plant until it has recovered from the check of lifting.

The *Montbretia* is not hardy in every locality; still, when the subsoil is porous and the stools covered with a few eal ashes, it is astonishing the amount of cold they will endure. It should be noted that their own foliage affords a good protection to them, although it may look unsightly when it is wilted.

The flower spikes of the *Montbretia* spring from near the top of the corm, consequently, if the leaves are cut too closely to the ground the future spikes may be injured. The foliage of all this class of plants plays a most important part in preparing for the flowering of the future. *James A. Poice*.

HARDY FLOWER BORDER.

MICHAUXIA THYRSOIDEA.

THIS odd-looking plant came here under another name. For the first season it did not get beyond a strong tuft of long, rather narrow, bristly leaves, suggestive of a Canterbury Bell. The following year it shot up, to the height of two feet, giving a flowering stem closely packed with buds from base to tip, and perfectly cylindrical. This broke into good-sized flowers of an indecisive white, the first buds to open being those in the middle of the spike. At the same time a number of shoots broke from the base and, ascending outwards and upwards for about nine-inches, these also became thronged with the crowded flowers. The blossoming period of this curious species, which does not appear to be the most handsome of its race, extends from June to August. The flowers are very attractive to bees and other insects, and they are evidently possessed of intoxicating or narcotic properties. Dry, sunny places are best suited to the *Michauxias*. They are biennials, but set seed freely in most gardens. *J., Ro Wen, Talycain, N. Wales*.

SALVIA AZUREUS.

THIS *Salvia* is most useful when grown as a pot plant for autumn decorative purposes. We grew this plant in the blue garden, where it frequently drew attention, and inquiries were often made respecting its culture.

It is not absolutely hardy, and owing to the late season of flowering protection is often required during frosty nights when the flowers are open. It well repays for this attention during the late autumn, the flowers being most conspicuous when grouped amongst late-flowering *Asters* and *Aconitums*, the tall, spiral, flowering heads relieving the somewhat flat surface of the *Aconitum* groups.

After flowering, the plants should be dug up and stored in boxes of soil and placed in cool pits from which frost is excluded. New stock may be raised by inserting cuttings, made from the young shoots, in a sandy compost, during the spring.

Plants intended for growing in pots may be stopped twice to promote a bushy habit. Specimens required for growing in the borders should only be stopped once, for the second stopping causes the plants to break too late to produce flowers in the open border. *C. Russ*.

PAEONIES.

WHEN planted in deeply-dug, rich land, the *Paeony* will thrive for a number of years. A mulch of partially-rotted manure should be afforded the plants annually. I have known *Paeonies* which were not disturbed for eight years, and except during seasons following excessive drought these plants produced an abundance of strong, healthy flowers and clean foliage.

The present time is suitable for planting. To increase the stock, old plants may be divided, and a strong knife should be used for severing the stools. Care must be taken to prevent damage of the crowns.

Although the *Paeony* will grow and flower moderately well under partial shade, the plants and flowers are more robust when given a sunny position sheltered from strong winds.

Groups of *Campanula pyramidalis*, *Eulalias*, and other tall grasses may be planted at intervals in the *Paeony* border with good effect. *Narcissi*, such as *Emperor* and *Sir Watkin*, may be used for adding interest during the spring. If colour is desired during late summer *Gladioli* may be introduced, but the *Paeony* should always predominate, and it is only on fairly large borders that these suggestions are practicable.

Fortunately, the *Paeony* is immune from many garden pests; slugs are troublesome sometimes, but watering the ground with alum in solution will keep the slugs in check. Plants growing in unsuitable soil, especially undrained, sodden land often fail owing to "wilt" of the foliage. Rust is sometimes troublesome. Spraying with Bordeaux mixture has proved effective in

checking this latter disease. If attention is paid to the cultural requirements neither of these diseases will give much trouble.

Established plants of some varieties will produce a large number of shoots, and it is advisable to thin them where they are crowded, early in the season. As growth develops neat supports will be required. By a careful system of feeding, and disbudding, immense flowers may be produced on long, firm stems. There are numerous varieties, many of which are sweet-scented. The double Chinese Paeonies are very popular, and a choice selection may be made from these varieties. The foliage of many Paeonies is beautifully tinted during the autumn, this adding considerably to the interest of the Paeony border. *Colin Ruess.*

GENTIANA SINO-ORNATA.

THE accompanying illustration (Fig. 155) shows the beautiful *Gentiana sino-ornata* growing in my garden in Perthshire, and I send it

valuable for supplying cut flowers for the decoration of dwelling rooms.

I am referring to the varieties which grow about three feet high, and the two best I have in my mind at the moment are the deep blue and rosy-scarlet. They are most effective if grouped together and are bound to command admiration.

Both plants are perfectly hardy and are best sown where they are to bloom. Larkspurs form tap roots and do not develop many fibrous roots; if for that reason alone, they should be planted in their permanent quarters when they are very small.

Some years ago I sowed seeds of these *Delphiniums* in rows in a very long border, and I found the most suitable time for doing so was about the middle of September. The seeds had time to germinate, and the seedlings grow an inch or two before the cold weather set in.

The ground was manured and dug some

BOG GARDEN.

MIMULUS CARDINALIS.

It is not often that one differs from Farrer, but when he describes this old plant as being "too coarse and lush . . . for any use except in the wildest of wild or bog-gardens" I beg to protest. Granted that the flowers of *M. cardinalis* are a little small compared with those of many others of its race, they are something very near a pure scarlet, which is an uncommon colour, and they never fail to attract attention on that account. In addition, *M. cardinalis* is a most prolific bloomer. We have it on the margin of the bog, and it is almost invariably the first of the Mcnkey-flowers to bloom besides being one of the last to go over, often being in blossom into November. It is, moreover, absolutely hardy and long-lived, rigid enough to stand without supports and not at all fastidious. *J.*

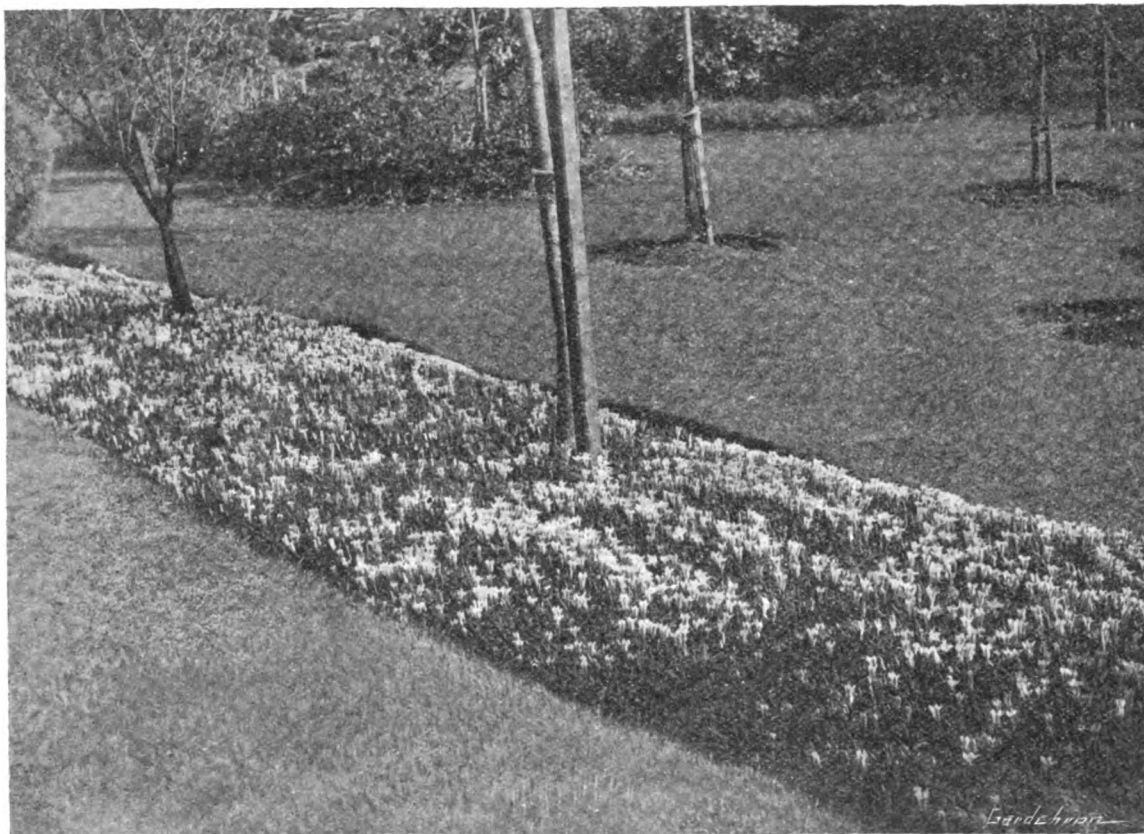


FIG. 155.—GENTIANA SINO-ORNATA IN A PERTHSHIRE GARDEN.

because it may be of some interest to your readers. The photograph was taken by myself on October 16, when the plants were in full bloom. The bed was planted in the spring three years ago, when small, rooted portions were put in about 'a foot apart. At present the bed is a solid mass of growths and flowers, and is a brilliant sight on a sunny day, when thousands of rich, blue flowers are fully open. *A. Harley, Blinkbonny, Kirkcaldy.*

ANNUAL LARKSPURS.

ONE of the best and also one of the oldest garden plants for summer flowering is the annual *Delphinium*, or Larkspur, as it is more commonly called. It is so simple to grow that it calls for little comment. These handsome subjects are widely grown and fully deserving of a permanent place in every garden. If planted at the back of herbaceous borders or in front of shrubberies and similar places they are most effective and are also extremely

considerable time before the seeds were sown. About the end of March, or just when the plants were beginning to grow, they were thinned to six inches apart. Early in April the ground received a good dressing of soot, which was well hoed in around the plants. After a few warm showers the effect on the growth of the plants, in the deep green hue of the foliage, was very noticeable.

My practice now is to sow the seeds broadcast in frames about the end of October to withstand the winter, and about the end of March the seedlings are planted in the beds.

Whilst in the cold frames they are given air on all favourable occasions; in fact, the lights are seldom utilised unless the weather is very severe. Nevertheless, I much prefer sowing the plants in permanent quarters in September; the plants grow stronger and the individual flowers are much larger—the plants also last much longer in bloom. *J. A. Kirkwood, Sutton Place Gardens, Guildford.*

WAHLENBERGIA HEDERACEA.

EFFORTS to establish this beautiful little native in the garden are not always successful, but latterly we have been more than satisfied with its progress. Hereabouts the difficulty of securing plants from its native road-side banks is to get a strong root. There may be plenty of stems trailing about the accompanying herbage, but the roots of these, even if you can get them, do not make promising material. But some time ago we secured several plants which were growing entirely apart from other herbage, clean, sturdy little cushions of glossy green, occupying those sun-dried lumps of clayey soil which are made by the hoofs of cattle. Transferred to the sloping soil at the brink of a rivulet these grew away at once, and have not only spread but flowered abundantly. They are quite by themselves and seem perfectly happy without anything to climb into. Indeed, they are nearly as prostrate as *Veronica canescens* close by. I allude

to this because it is possible that attempts to grow *W. hederacea* in association with something else, as often advised, generally seems to lead to the latter extinguishing the former, for we are unable to preserve that nice adjustment between species one sees on nature's moorland banks. There are some things, such as the Grass of Parnassus (*Parnassia palustris*) which, while it grows and looks well in a carpet of the *Wahlenbergia*, does not menace the smaller plant. On the other hand, the latter may prove too robust a neighbour for some, of which the Bog Pimpernel (*Anagallis tenella*) may be mentioned as an example. *A. T. Johnson.*

A FEW PLANTS THAT THRIVE IN THE SHADE.

MANY lists are made purporting to be of plants suitable for shady borders, but in point of fact although a great many plants will exist in sunless gardens they may be fairly sharply divided into three classes (1) Those that are of rank growth and of unsuitable character for important positions in well ordered gardens; (2) those that merely exist when bereft of sunshine and generally grow lanky or straggling with few and inferior flowers, and (3) those that will really thrive in shade as well as, or better than in sunny situations. This last is, in my experience, a class of comparatively small numbers, but embraces some most delightful plants which deserve to be held in very high esteem.

Several distinctive characteristics may be mentioned as generally applicable to the best of shade-loving herbaceous plants, two of which are noticeable in marked degree; first they are plants possessed of particularly beautiful foliage as well as flowers, and secondly their colours are usually of light, soft shades, rather than bold or intense colours. There is doubtless truth in the declaration that only sunlight can give real brilliance and glory to a bright hued flower, but it is equally true that sunshine is necessary to show up the brilliance to advantage, whereas paler shades are far more effective in shade or subdued light. Even in twilight a soft lavender or mauve will show up remarkably well where an intense blue will appear quite dull and inconspicuous. This may be put to the test by going out in the twilight to see a mixed collection of *Delphiniums* and note how much more effective the weaker and more delicate shades are than the brightest blues. So it is with light pinks as compared with scarlets and crimsons and with lemon and yellow as compared with rich orange and flame tints. It is a wise provision, therefore, that plants for sunless situations should bear flowers of delicate shades rather than full, strong colours.

Unique, to my mind, among shade-loving plants is the old and somewhat despised Evening Primrose, *Oenothera biennis*. Is there another plant in cultivation that produces such a display of clear and delicately refined yellow? I think not, and it is to the plant's misfortune that it is of such free and easy growth with scarcely an ailment or a natural foe, for had it been a difficult subject, to tax the skill of clever plantmen, it would rank among our most coveted plants. All that is necessary is to watch for the appearance of seedlings and promptly hoe up any which stray beyond desirable limits or that may overcrowd legitimate quarters.

Rodgersia pinnata is unlikely to cause anxiety through unruly behaviour, but it will thrive gloriously in shade and moisture. Noble, indeed, is the whole aspect of this plant; its foliage like nothing so much as Horse Chestnut leaves lacquered in glittering bronze, the poise of the leaves on rigidly erect stems being well calculated to accentuate their charm. A well established plant sends

up fine spikes of closely nestling flowers, the colour of which combines cream, biscuit, and delicate blush-pink. *R. tabularis* is another fine species.

Podophyllum Emodii may well make a near neighbour for the *Rodgersias*, and if, between them, the tall and decidedly uncommon *Ranunculus Lyallii*, with its large, glistening white, cupped blossoms, be established, a trio of aristocrats will constitute an imposing feature, filling a shady recess with wondrous beauty.

The *Cimicifugas* are extremely elegant plants, their tall, tapering spikes of fluffy cream-coloured flowers looking their best when backed by some dark-leaved tree or shrub, such as Irish Yew, Holly, Portugal Laurel or *Viburnum Tinus*.

Several species and varieties of *Cimicifuga* are in cultivation but it must be confessed that some confusion exists in their nomenclature. *C. japonica* major, in its true form, is one of the best, but *C. simplex* is good, and a very distinct species is *C. racemosa* in which the many-branched racemes are of drooping instead of erect habit.

C. cordifolia is easily distinguishable by its broad, cordate leaves, and yet the wrong plant is frequently supplied, the ordinary *C. japonica* being sometimes labelled *cordifolia*, with no justification. The earliest of the tribe is *C. elata*, flowering in many gardens in June at a height of little over two feet. The *Actaeas* are near akin to the *Cimicifugas*, and their earlier flowers are followed by a second attractive display of shining berries, which in *A. spicata* are black, and in *A. alba*, white, and in *A. spicata rubra* scarlet. *A. alba* is frequently labelled *A. spicata alba*, but it should correctly be given specific rank. They are all good plants for shady places, the one necessary precaution being to place them beyond easy reach of small children, who might be tempted to eat the Currant-like berries, which are poisonous.

The lovely hybrids of *Astilbe Arendsii* should be made much of where a cool, moist dell, partially surrounded by trees and shrubs can be planted with a colony of the finest varieties. There are, admittedly, quite a number of these modern *Astilbes* which are so very similar that an interchange of labels would scarcely be detected even by their raiser, but after an extended trial the half-dozen following varieties are submitted as being both distinct and really good:—*Ceres* is about the best of the pale Malmaison pink varieties, and is of free habit. *Gruno* is much brighter, a real salmon-pink which makes a fine glow of colour. The spikes are large and much branched. *King Albert* is white, and for size, combined with a charming elegance, it stands quite by itself. *Granat* is the nearest to a crimson *Astilbe*, and makes a fine contrast to *King Albert*. *Salland* is of reddish-purple hue, and is noteworthy for the height its spikes attain, six feet being quite usual when the plants are comfortably established. *Gloria purpurea* is specially commendable both for its distinct shade of dark rosy lilac and for the metallic tints of its foliage, but if in preference to what some consider rather a dull colour for a shady spot another white is preferred, Professor V. D. Wielen may well be selected.

Aconitum bicolor always seems to be more pleasing in shade than the all-blue varieties, because the white in the flower has a prettier effect in subdued light, but all the *Monkshoods* grow well in shade, and the yellow, green-tipped blossoms of *A. Lycocotum* are very pleasing. *Epilobium angustifolium* in both its rosy cerise and pure white forms, will, even under the spreading branches of trees, produce a fine mass of flowers if their woody rhizomes are distributed over a fair-sized area, and *Lythrum virgatum* is one of the most graceful of shade-loving plants. Mr. Maurice Prichard seems to have a form which is many shades brighter in colour than the ordinary stock one generally sees, and even in far northern gardens Mr. Prichard's form compares to great advantage with the older plants close beside them. *Gillenia trifoliata* would be well worth growing for its foliage alone, but its incomparably dainty white

blossoms shimmering precariously on the slenderest of red stalks cannot be over-rated.

Of *Anemone japonica* the finest white variety is unquestionably *Louise Uhink*, the partial doubling of the flowers adding substance without robbing them of elegance. *Mont Rose* and *Queen Charlotte* are both extremely good pinks, and an excellent dark red is *Prince Henry*.

Rich orange and yellow can be secured in the many varieties of *Trollius*, and the two double yellow varieties of *Ranunculus*, *R. acris plenus*, and *R. speciosus plenus*, are both good shade-loving plants, whilst no chance should be lost of growing the glaucous-leaved, satiny white-flowered *R. amplexifolius grandiflorus*.

Many choice dwarf plants may be grown to perfection in sunless situations, *Nierembergia rivularis*, *Mertensia siberica*, *Omphalodes verna*, and the large-flowered, spreading *Oenothera missouriensis* being but examples. The old favourite *Tiarella cordifolia* is challenged by a formidable competitor in the sweet little *Astilbe simplicifolia*, and I may mention an exception to the rule regarding bright colours and shade in that *Mimulus* provide in such varieties as *Coronation*, *Brilliant*, and *Robin Redbreast* colours rich, glowing, and altogether lovely. There is small need to mention the delights of *Primulas*, such as *P. pulverulenta*, *P. Sieboldii*, *P. japonica*, *P. cortusoides*, and *P. sikkimensis*, while the *Hepaticas*, dwarf *Anemones* of various kinds, and *Veronicas* also play their part well in furnishing shady borders, and even where the soil is dry through the ramifications of thirsty tree roots we may still provide colour and charm by sowing a good strain of Foxgloves.

It is infinitely better thus to choose one's subjects than to fill the shady borders with the rankest of *Polygonums* and *Helianthus*, the poorest of perennial *Asters*, and *Campanulas* that will simply grow far beyond their normal height and produce only flowers of sickly mediocrity. *A. J. Macself.*

PUBLIC PARKS AND GARDENS.

THE Town Council of Bathgate has under consideration the provision of a new park at Kirkton, with bandstand, etc., at a total estimated cost of £7,533.

THE MINISTRY OF HEALTH has sanctioned a loan of £1,300 required by the Parish Council of Hornechurch for the purchase of the North West recreation ground.

KETTERING URBAN DISTRICT COUNCIL has received sanction from the Ministry of Health to borrow £2,615 for laying out a public pleasure ground in Grafton Street.

SALFORD CORPORATION contemplates purchasing twenty-two acres of the Hart Hill estate with a view to extending Buile Hill Park.

THE URBAN DISTRICT COUNCIL of Portadown has requested Messrs. Fergusson and McIlveen, architects, etc., Belfast, to prepare a scheme for a pleasure garden in Bridge Street, a bowling green in the public park, and the reconstruction of the tennis courts.

THE Corporation of Poole proposes to borrow £2,385 for the purchase of land at Hamworthy for a recreation ground.

APPLICATION has been made to the Ministry of Health by Southampton Corporation for sanction to borrow £5,000 for the purchase of land at Millbrook for public walks and pleasure grounds.

THE London Parks Committee recommends the L.C.C. to approve an expenditure of £53,850 on the improvement of parks and pleasure grounds.

FERNERY.

LOMARIA ALPINA.

THOUGH a native of New Zealand, this pretty little Fern seems to be hardy in most districts, for it has withstood 18° to 20° of frost here without injury, and that when growing in unusually cool soil near water.

It is a dwarf, rhizomatous species, producing an abundance of dark-green, leathery, overlapping fronds, suggestive of those of *Ceterach officinarum*, and no more than about four inches in length. *L. alpina* is an ideal subject for the cool side of the rock-garden, and I find that it thrives abundantly in conditions which suit *Shortias*, *Galax aphylla*, *Schizocodon* and the dwarfier *Gaultherias*. It is an evergreen species and never looks otherwise than fresh and neat. *N., Wales.*

ORCHID NOTES AND GLEANINGS.

CYCNOCHES WARSCEWICZII.

J. MCCARTNEY, Esq., Hey House, Bolton, sends a fine inflorescence of the male form of this very remarkable and now rare species. The pendulous spike, three feet in length, bears twenty-three flowers, each about one-inch-and-a-half in width and distinctly arranged. The sepals and petals are greer and reflex when mature. The lip bears a circular blade divided into seven to ten equal parts which are white, tipped with yellow, and two broader and more closely-approaching blades of a greenish tint. The slender, arching column, enlarged at the apex, carries the anther so that it is available when the larger and more fleshy female flowers are produced, which may be either on the same plant as the males or on another example. An illustration of a plant with male and female flowers was published in *Gard. Chron.*, January 9, 1909, p. 29, Fig. 21.

In the earlier days of Orchid culture the production of the few-flowered female and the many-flowered male spikes were supposed to indicate separate species, but their true relation is now well known. A very interesting assistance in considering this matter was given by a raceme of *C. egertonianum* with male and female flowers on the same spike which developed in 1843 in the Westonbirt collection, then owned by the late R. S. Holford, Esq., the father of Lt.-Col. Sir Geo. L. Holford, who has developed the collection in a remarkable manner.

Mr. McCartney has another plant coming into flower. Both were purchased as *C. pentadactylon*, in the saleroom, in 1923, the plants being imported from Costa Rica, the locality of South America in which Skinner's specimens of *C. Warscewiczii* were recorded in 1851. *J. O'B.*

STENOGLOTTIS LONGIFOLIA.

THIS South African terrestrial Orchid is an ideal plant for amateurs. Although introduced from the Durban Botanic Gardens so far back as 1889, it is not well known in gardens. Specimens were well shown in Sir Jeremiah Colman's group at the Royal Horticultural Hall on October 20 last, when the graceful charm of the plants won the admiration of many.

The flowering period of *Stenoglottis longifolia* extends for two or three months from the time the first flowers open until the last are fully developed. New flowers are developed as the spike increases in length, and on good plants a spike may ultimately be twenty-four inches tall.

The species succeeds in the cool Orchid house or cool greenhouse. The tuberous roots delight in a mixture of fibrous loam, leaf-soil and peat, with sufficient coarse sand to keep the compost open. Pots or pans make suitable receptacles, and these should be well drained. A moist shady position should be afforded the plants. Dryness at the roots even when the plants are at rest must be guarded against, as this Orchid loses its leaves to a great extent

during the winter months, which is in no way detrimental, as the plants are never absolutely dormant. They are best re-potted in the spring when new growth commences, as the tubers are then easily divided. When the plants are in full growth and the receptacles full of roots, frequent waterings with weak liquid manure will be beneficial.

The spikes of light purple flowers rising over the tufts of green leaves make *Stenoglottis longifolia* a most attractive plant, and several may easily be grown in a small space. There is a variety known as *S. longifolia superba*, which is a stronger grower than the type and produces larger spikes of flowers of deeper colour. It is a superior plant in every respect. The albino form is known as *S. longifolia alba* and is somewhat scarce.

Stenoglottis fimbriata, another member of the genus, is a smaller growing species; the flowers are dark purple, and the inflorescences attain a height of from twelve to fifteen inches. *J. T. B.*

is a very pretty and distinct colour of rose and yellow.

Charlotte Klemm is a very effective bedding variety with blood-red, semi-double flowers.

The China Roses are suitable for forming low hedges. They should be planted in a double row about two-and-a-half feet from plant to plant, in well-manured and deeply-trenched soil. It is best not to mix the varieties in a hedge, and the strongest growers should be selected for this purpose. The base of the hedge should be kept free from weeds. Dead wood and weak, useless shoots should be removed annually. China Roses are charming subjects for growing in Italian pots on a terrace.

Although this class of Rose is scarcely suitable for inclusion in the Rose garden (except where the garden is planned on a very large and comprehensive scale) a delightful garden may be made by planting a collection of China Roses in a sheltered position. Such a garden will afford much pleasure at all seasons of the year. *C. Ruse.*

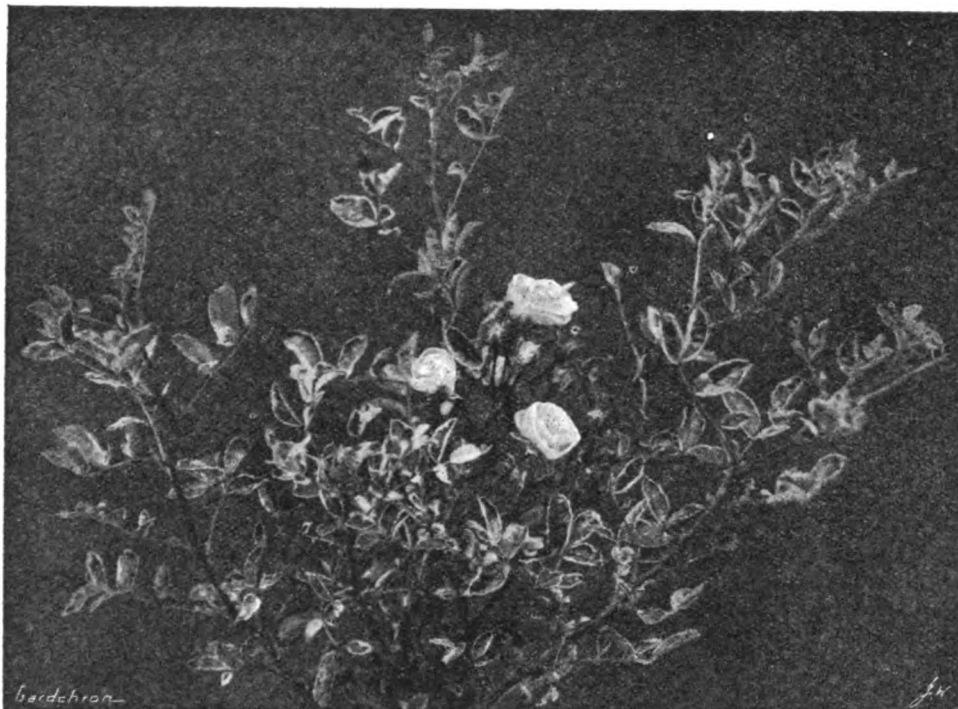


FIG. 156. ROSE ACHIEVEMENT.

A variety with variegated foliage.

ROSE GARDEN.

CHINA ROSES.

THE valuable qualities of the China Rose are frequently over-looked owing to the many new Roses of all sections which have been introduced into commerce during recent years.

The Common China, or Monthly Rose, which was introduced in 1796, will grow and flower profusely in positions where many other plants would not survive. Growing in a cobbled yard near where this note is written an old plant of this Rose is nearly always carrying buds and blooms. This plant is of great age, and the cobbles completely cover its roots. Such plants afford much more interest than Laurels or Ivy and do not need much attention to maintain them in a neat, clean condition. The variety *Hermosa* (syn. *Armosa*) is similar to the above, but the blooms are more double. This Rose is suitable for beds and for massing. In addition to the pink varieties, *Queen Mab*, apricot, shaded with rose, is a very free-flowering variety, but it will not thrive under conditions which suit the common pink Rose. *Laurette Messimy*

ROSE ACHIEVEMENT.

At one time or another almost every kind of tree and shrub produces a shoot bearing more or less—usually less—variegated leaves and, such is the fascination of the abnormal attempts have long been made to perpetuate these variations. In a number of well-known instances the attempts have been successful, while with other species success seems to elude the propagator. Considering how long the Rose has been grown in our gardens, it is interesting to remember that hitherto no well variegated form of any species or variety has been fixed, although every cultivator must have had, at some time, at least one instance of this phenomenon. A few variegated forms have been in cultivation, but they are half-hearted specimens and of slight interest. At the National Rose Society's Provincial Show at Bath last July, Messrs. T. English and Son showed, amongst the novelties, an exceptionally well variegated Rose (see Fig. 156) in *Achievement*, which also produces quite decorative clusters of small, pale pink flowers. The habit of the plant which accompanied the sprays of bloom suggested a pillar variety growing to a height of about five feet. *B.*

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PUBLIC HEALTH ACT (1925).

THE Public Health Act, 1925, which came into force on September 7 last, deals with three distinct matters which directly or indirectly affect most public park authorities in England.

Section fifty-three of the Act deals with the much-vexed question of trees overhanging streets or public footpaths. While it has always been quite clear that owners of overhanging trees or shrubs could be compelled to keep them within bounds, there has, generally, been a difficulty about public authorities recovering summarily as a civil debt the cost of undertaking this work when owners have refused to do it themselves. This difficulty has been disposed of once and for all, as the present Act gives local authorities power to recover any expenses they have been put to in carrying out such work, as a civil debt.

The new Public Health Act also provides that persons aggrieved by any requirement of the local authorities regarding the lopping, etc., of their trees may appeal to a petty sessional court within fourteen days after the service of the local authority's notice. This proviso will, no doubt, find much lucrative employment for lawyers in days to come!

It is now within the province of County Councils and other local authorities, under Section sixty-nine of the Public Health Act, 1925, "to acquire by purchase, gift, or lease, and lay out, equip and maintain lands" for the purpose of cricket, football, and other such-like sports, and either let such lands to clubs or run them themselves and charge spectators for admission on the occasion of matches. In other words, the law now permits local authorities to own and manage athletic grounds as revenue-producing concerns.

If used discreetly by the responsible authority these new powers should prove of considerable help in fostering a love of healthy sport and first-class cricket in neighbourhoods where private clubs are not wealthy enough to rent or purchase land of a sufficient area to form a really good sports ground of their own. As is well known, local authorities not merely possess the facilities for raising the money for purchasing and equipping suitable land, but

fortunately, they have powers for acquiring it on much more reasonable terms than have private individuals.

That part of the Act—Section fifty-six—which is supposed to give added powers to public authorities in their administration of parks, must come as a great disappointment to such as have been anticipating any help from it. Those of us who acclaimed the Public Health Amendment Act, 1907, as the Magna Charta of public park management cannot help feeling that the present Act is an unworthy fruit of the past eighteen years' experience of modern park administration.

From my own professional point of view, the 1925 Public Health Act, in so far as it deals with parks, is absolutely useless.

Take, for instance, the absurd method in which it deals with out-of-doors entertainments. For years past many parks authorities during the summer months have provided a light type of entertainment for the people in the form of costume concert parties. Excepting where local Acts give the necessary powers, the payment of such parties is illegal, as bands of music only are recognised by the 1907 Act. It was hoped by many that this anomaly would be removed in the present Act, but such is not the case. While it is now legal to pay choirs out of public funds, the Act specifically forbids the use of costumes or scenic accessories. Thus, while giving with one hand it restricts with the other!

The most reactionary feature of the Act to my mind, however, is the power it gives to local authorities to rent cricket and football pitches to private clubs. With the ever-increasing difficulty parks authorities have in providing the youth of towns and cities with sufficient playing accommodation, it is, to say the least of it, most undemocratic that land purchased out of public money or dedicated to the use of the public should be let to the highest bidder and to the exclusion of the poorer members of the community.

While all concerned with park administration realise the great difficulty that well-to-do clubs have in securing playing pitches in towns, and are deserving of consideration equally with their less fortunate fellows, their wants should be met with other methods than the renting of public land to them. The Playing Fields Society is the organisation which specially meets the needs of players who are in a position to pay for the use of sports pitches.

It is hoped that the present national impetus that is being given to this movement will result in the provision of many more playing fields throughout the country, and thus keep public park recreation grounds to their legitimate use in providing playing areas free of charge for the benefit of those most needing them.

One cannot help thinking that had those responsible for framing the Section dealing with Recreation Grounds been in a position to confer with a body of officials whose experience in public park administration was such as to entitle them to give valuable advice on the subject, the present Act would have been a help rather than a hindrance to up-to-date parks departments.

When will public park officials in this country form themselves into an organisation which will have the influence and status of the Parks Superintendents Association of America? *Chief Officer.*

DANGEROUS TREES AND THOSE GROWING ON DIVISIONAL WALLS.

THE subject of the dangerous tree is one of those anomalies of the English Law, which, probably because no case of any importance has ever reached the High Court, has been left untouched by the modern mechanism of our present legal system.

If my neighbour insists on allowing a dangerous and decayed tree to remain undisturbed on the border of his garden, so that it is both a nuisance and a source of peril to my person and my property, the English Law gives me no adequate remedy against such unneighbourly conduct, nor have I any power to compel the owner to pull down the offending tree. If, however, the tree besides being a nuisance to me personally, is also likely to be a danger and a nuisance to a Public Highway, under a provision of the Highways Act 1835, the local highway Surveyor can give the owner of the tree notice to remove the danger. And now owing to recent legislation the Surveyor can have the tree cut down and send the bill in to the owner. Where the difficulty cannot be solved in this way, the only remedy, if it can be called a remedy, is to wait till the tree falls, and does some damage to me or my property, and then, if I can prove that the owner knew that the tree was in a dangerous state, he will be liable in compensation for the resultant damage or loss. But even this might not hold to-day, as the case in which the decision was given was tried in the County Court only, and never reached the High Court.

There is also an old law, or rather custom, which appears to be prevalent in most parts of the country, on the respective rights of the landlord and the tenant to trees which are brought down in a storm. The landlord has first claim on all non-decayed and timber trees, while those trees which were decayed and belong to the class of non-timber trees are the property of the tenant. Although this is hardly a law, yet the Courts have upheld the custom, and judges have decided in favour of it, and if a case should come into the Courts to-day, they would probably do so again.

There is an old case on the subject of fruit trees growing on divisional walls, and it was decided by the learned judge who tried it, that it was possible for one man to acquire an "easement" or right to grow and nail fruit trees on another man's wall. So unless the trees are allowed to be nailed against the wall under a special agreement, which can be terminated by the owner of the wall, the owner of the trees will in time obtain the right to have them there, and cannot be compelled to cut them down or take them away. The obvious question the reader will ask is: "Why can't I pull down my wall and plant a hedge or some less adaptive fence? Then my neighbour's fruit trees will have to come down." Of course, this is a very sound suggestion, and in practice it might have the desired effect. I think, however, that this would be a very unwise course to take, in view of the decision given in the old case referred to above. The judge in this case, when delivering his judgment, is reported to have said, that if the owner of the wall had it removed, or even if it fell down, it was quite probable that he would have to rebuild it again, as if not he would make himself liable for interfering with his neighbour's "easement," and perhaps find himself saddled with heavy damages as compensation to the owner of the fruit trees.

If the trees are not kept within the boundary of their owner's property, however, but trespass into the neighbouring garden, and so block up the gutters or do some other damage, the owner, or apparently the occupier, of the latter premises is allowed to cut them back so far as they come on to his property, and he should be able to obtain compensation for any damage they do to it. *Harold A. Sharman.*

TREES AND SHRUBS.

RHODODENDRON DELAVAYI.

THIS interesting Chinese Rhododendron (Fig. 153) is named in compliment to Père Delavay who first introduced this and several other of our most useful Chinese species. Seeds of *R. Delavayi*, also of *R. racemosum*, *R. yunnanense* and *R. serotinum* were sent to Paris by this French missionary in 1889 and raised in the Jardin des Plantes. A few seedlings of all four species were received at Kew in November of the same year. A truss from one of the first seedlings to flower is figured in the *Bot. Mag.*, t. 8137. The colour is an intense red with black blotches.

R. Delavayi is said to be a widely distributed species in Yunnan. Père Delavay collected it at Ysangschan at eight thousand feet, and Mr. George Forrest collected specimens during 1905 and 1906 in Western Yunnan and again on the Lichiang Range in 1913 and 1914.

Cultivated plants bear a close resemblance to *R. arboreum*, the best known, most varied, and widely distributed of the Himalayan species, there being no difference in the essential characters. In point of hardiness also *R. Delavayi* and *R. arboreum* have much in common, both being suitable only for general culture outside in the mild and sheltered gardens of the south and west, including Wales and the west of Scotland. The best recorded specimen, and one of Père Delavay's original seedlings, is growing at Kilmacurragh, Rathdrum, Co Wicklow, Ireland. In 1924 it was twelve-feet high and thirteen-feet through.

The Chinese collectors record *R. Delavayi* as a large bush, or small, evergreen tree, growing in woods and open situations on the hill-sides. It is a variable species; the felting of the leaf is variable, and the colours of the bell-shaped flowers range from rich, deep, red through rose and pink to white.

HYPERICUM URALUM.

THE illustration (Fig. 134) on page 329 (*Gard. Chron.*, October 24) draws attention to a very graceful and distinct species of *Hypericum*. Mr. White, however, is quite in error when he writes of the plant in the "Notes from Wisley" as a new shrub. *H. uralum* was first introduced from Nepal in 1820, and flowered in the nursery of Messrs. Whitley, Brame and Milne at Fulham in 1822. It is figured in the *Bot. Mag.*, t. 2375, published in 1823, and is described as the Myrtle-leaved St. John's Wort. Koehne described it as a variety of *H. patulum*, but as a garden shrub the subject of this note is very distinct. *H. uralum* is hardier than that species, and is semi-evergreen, with thinner leaves. The flowers, however, are not so large and showy, lacking the substance and rich golden-yellow colour of *H. patulum*.

ERICA CILIARIS VAR. MAWEANA.

Erica ciliaris var. *Maweana* is a most valuable dwarf Heath for late summer and autumn blooming, as its flowering season extends from July to November. The rosy-red flowers are larger than those of the type, and the plants also are sturdier and more luxuriant in foliage. It was found in Portugal by the late Mr. George Maw, in 1872, and is one of the best autumn-flowering Heaths for massing and grouping for effect.

ARBUTUS UNEDO.

THE *Arbutus* are valuable evergreens with luxuriant, rich green foliage, but they are also interesting and showy autumn-flowering bushes. In this connection the varieties of *Arbutus Unedo* are the most attractive, special commendation being accorded the variety *rubra* with flowers of a red hue, which is usually sold in nurseries as *Arbutus Croomei*. At the R.H.S. meeting on Tuesday last, fruiting and flowering sprays of *Arbutus Unedo* were shown finely by the Hon. Vicary Gibbs. A. Osborn.

CUPRESSUS OBTUSA PYGMAEA.

CUPRESSUS OBTUSA, the *Retinospora obtusa* of Siebold, is one of our most ornamental evergreen trees, and was introduced to this country from Japan in 1861 by Mr. John Gould Veitch. The tree is somewhat slow in growth, but in its native country specimens over one-hundred feet in height are met with, although the tallest examples in our gardens are not much more than forty-feet in height.

Several forms exist, including a dwarf type known as *pygmaea* and sometimes as *nana*.

for beautifying lawns and other open spaces in the dressed quarters of the garden, and the merits of *Cupressus obtusa pygmaea* should not be overlooked by those who intend planting specimen trees in pleasure grounds this autumn.

VACCINIUM CORYMBOSUM.

ALTHOUGH one of the commonest of the American *Vacciniums* in our gardens, the subject of this note is perhaps the most attractive. We grow *V. corymbosum* in cool loam in open woodland, and if it is slower to attain its full stature (eight feet to twelve



FIG. 157. —CUPRESSUS OBTUSA PYGMAEA (NANA) AT WARREN HOUSE, KINGSTON HILL.

This is usually utilised as a rock-garden plant, for it is of slow growth and makes a desirable little shrub for associating with alpine. In General Sir Arthur Paget's gardens at Warren House, Kingston Hill, Surrey, there is a remarkably fine specimen of this Conifer (see Fig. 157) which has attained to a height of more than ten-feet and is some six-feet or seven-feet through at the base. Mr. W. James Penton, the gardener, informs us that the tree has been planted some twenty-two years and made a noble specimen, which is the admiration of all visitors to the gardens. Conifers of pyramidal outline of this type are often used

feet) under these comparatively dry conditions it makes a nice, medium-sized bush, healthy in appearance, and it flowers and fruits well every year. The cylindrical, pinky-white blossoms are borne in clusters at the tips of the past season's wood, and the berries, about half-an-inch wide, are black but thickly coated with a white bloom. Not the least attractive feature of *V. corymbosum* is its autumn colouring, the leaves changing to orange and crimson before they fall. At this stage the shrub has a curious likeness to some of the deciduous Azaleas with which it blends well at any season. J.

NOTICES OF BOOKS.

Library Catalogue of the Linnean Society.

CATALOGUES of libraries, especially scientific libraries, are usually looked upon as boring "official" publications, only of use as a base (and usually inaccurate) means of gaining in the end some further information for that (always!) highly accurate paper one happens to be writing. However, it is evident that certain popular novelists positively revel in this class of publication, and when hard up for the name of their latest villain, hero or heroine, they just glance through a so-called dry-as-dust library catalogue, and, if they look long enough, they find what they seek!

The new Library Catalogue of the Linnean Society of London* is a handy volume of eight-hundred-and-sixty pages, clearly printed in breviter type and highly creditable to its printers, Messrs. Turnbull and Spears, Edinburgh. Within its pages entries for over fifty thousand volumes of botanical, zoological and other literature are compressed in some form or other, many volumes of serial publications being included in a single entry. Most of the works have "short-title" entries only, but this necessary brevity has been broken away from in those cases where the work is very rare or needs special mention. A full bibliographical catalogue must remain, for the present, an Utopian dream for the greater number of scientific societies in this country.

One interesting feature about the present catalogue is that it specially records the greater portion of Linnaeus's own library, which came into the possession of the society with the other Linnaean collections in 1828. About three-hundred of the medical works from the library of Linnaeus were returned to Sweden in 1894, and the bulk of these are now at Hammarby, near Uppsala, in the actual building in which Linnaeus kept his collections during the later years of his life. That portion still in the possession of the Linnean Society numbers about three-thousand books and pamphlets, and forms a fairly representative collection of pre-Linnean and Linnean literature. In spite of this, however, the Linnean Society is not particularly rich in some of the earlier natural history books, especially incunabula. A good many early books and pamphlets, duplicates from his own library, were given by Sir Joseph Banks, Bt.; and from time to time both large and small numbers of old books have been generously presented to the Society by its Fellows and others. However, the gaps are still numerous, and a private society usually has its hands too full with providing for to-day and to-morrow, to take advantage of tempting items in booksellers' catalogues.

Association books are somewhat numerous in the Society's library; and, in a fuller catalogue than the present one, would, no doubt, receive special attention. Not only are there many instances where some celebrated work is inscribed: "For the Linnean Society, with the Author's Compliments," but some also where an author's own annotated copies have been presented. The first volume of Redoute's *Les Liliacées*, and Ventenat's *Jardin de la Malmaison* bear inscriptions that they were presented to Sir James Edward Smith, founder of the Society, by the Empress Josephine; and there are other instances of a similar kind.

The influence of specialization both in Botany and Zoology has greatly increased in recent years, and must add to the difficulties of a society pledged to encourage the cultivation of natural history in all its branches. What was a more or less simple proposition in 1802, when the Society received its first Charter, must become a more and more complicated one as time goes on; and in the end some form of active co-operation between the libraries of scientific societies may be found to be a necessity.

* *Catalogue of the Printed Books and Pamphlets in the Library of the Linnean Society of London*. New Edition, London: Longmans, &c., 1925. 25s.; reduced price to Fellows.

MARKET FRUIT GROWER.

OCTOBER opened and closed with very pleasant weather, in which good progress was made with all necessary work; but there was a period of heavy rain accompanied by gales of great force from the 18th to the 26th, inclusive, which hindered the gathering of Apples and brought down a great many windfalls. But for this the Apple harvest would have been completed. As it was all varieties were picked except Allington Pippin, which I always leave till last to gain colour and flavour. This can safely be done as it is one of the best varieties to hang. Even at the end of the month, when most of the leaves have fallen, the fruits remained quite firmly on the trees, the heavy crop presenting a remarkable appearance.

STORING DIFFICULTIES.

The close of the picking season for Apples always presents some difficulty if there is anything of a crop. The fruit pours in, and the problem is to find accommodation for it. Earlier in the season there is not the same trouble because the situation is relieved by continual marketing, which prevents any accumulation of fruit in the store. With late varieties this is impossible, as some of them must be stored for a time before they are fit for sale; and others need to be held back in order to secure the best prices. Lately, the market for such varieties as Lane's Prince Albert and Bramley's Seedling has been very unsatisfactory, offering no temptation to sell. Every available building has therefore to be pressed into service as a temporary store. Even then there is the difficulty of finding receptacles for the Apples. I have a very large number of trays, such as are used for sprouting seed Potatoes, which are adequate for holding the Apples during the greater part of the season; but towards the end the supply often runs short. It generally comes to making heaps of some of the less valuable samples, in the buildings where possible, but also in the open if necessary, the heaps being protected with straw in the latter case. The fruit keeps quite well in this way, but the method is not ideal because most of it becomes more or less marked or bruised, and is consequently not fit for the best markets. On the ideal fruit farm, I suppose, such troubles would be obviated by having adequate storage room and an unlimited supply of suitable boxes.

For the actual storage of keeping varieties I consider that boxes of about bushel size are best. If the Apples are kept in smaller bulk they are more liable to shrivel. Trays or shelves taking single layers, so often used in gardens, are worst of all, particularly if placed in a dry loft. Cold storage gives the best possible conditions; but failing that one should choose a frost-proof cellar or a building with an earth floor, and as low and even a temperature as possible. Wrapping each Apple in oiled paper is possibly worth while, though results of trials of this method carried out last year under the direction of the Ministry of Agriculture are conflicting, and can hardly be said to justify the adoption of the plan on anything more than an experimental scale. Oiled wraps, specially cut to size, are obtainable, and should certainly be tried. I made a small test early in the season with Beauty of Bath, which is not, of course, a keeping variety, and found that the fruit kept equally badly whether wrapped or not. I shall, however, try again with late varieties. In some of the official trials wrapping kept the fruit in good condition for six weeks longer than unwrapped fruit, which would certainly be worth while for marketing purposes. In other cases no definite advantage was obtained.

Personally, I am not very keen on storing Apples. Mine is an early district, and Apples grown in it do not seem to keep very long. Or perhaps it is because they are grown on light soil. Whatever it may be, there is certainly a difference in the keeping qualities of Apples grown in different districts. If I can get 7s. a bushel for late cooking Apples when they are gathered, I always think that it pays me to

sell rather than risk keeping them until February. The price seldom rises much before then. This autumn, however, 7s. a bushel has not been obtainable up to the time of writing: so I think it is obviously a year when Apples should be stored. It is not a bad plan to sell the first grade fruit and store the second grade, the grades in this case referring only to sizes. The smaller Apples keep better than the big ones, and may make as much money if brought out of store after Christmas. But what I do not believe in is storing Cox's Orange Pippin. This variety cannot be expected to keep until imports begin to fall off in early spring. Some growers hold this variety until just before Christmas, when it usually makes less money than shortly after gathering. I sold about 490 bushels of Cox's Orange Pippin during October, first-grade fruit making 12s. per half-bushel throughout, and 40½ boxes of "specials" from 25s. to 27s. There was, unfortunately, a large proportion of scabby fruit which had to go at 4s. to 4s. 6d. per half-bushel, which shows how much one can lose through scab. By the way, Bramley's Seedling, which used to be practically immune from scab, is this year affected in a good many places. Probably this is the cumulative result of three seasons favourable to the disease.

MODERN VARIETIES.

It cannot be said that market growers are slow to adopt new varieties which promise to suit their purpose. This year the shops showed quite a lot of Charles Ross and Rival; and I noticed one display of Ellison's Orange, labelled by the way, "Allington Pippin"! Amongst Plums, Pershore Purple has been largely planted, and has begun to come on to the market in fair quantity. It is a rather small Plum, and will probably always be cheap, but its heavy cropping habit should make up for this. Giant Frune is another Plum which has been planted for market. As this is both large and late in season it should prove valuable. One or two of the American varieties of Apples have been adopted to some extent. Wealthy premises to become popular, and is particularly suitable for seaside markets, as it is ready for use during the holiday season. At the Imperial Fruit Show I noticed some very fine boxes of Jonathan, grown in Worcestershire. They had all the colour and attractiveness of imported fruit of this variety.

THE PLUM CROP.

Now that the figures for my crop of Plums are available, I am rather surprised to find that, though very light, it was better than last year's crop. This was due chiefly to much heavier yields of River's Early Prolific and Pond's Seedling. The figures for the past four years are rather interesting, showing as they do how yields vary from year to year; also that there has not been a really big crop since 1922, which was my record year. The figures refer to half-bushels:—

	1922	1923	1924	1925
Rivers' ...	907	148	192	345
Czar ...	333	56	412	201
Louvain ...	509	62	160	50
Victoria ...	388	375	12	76
Pond's ...	412	125	3	171
Monarch ...	79	167	0	50
President ...	117	39	1	5
	2,745	972	780	898

A noticeable feature is the poor cropping of President. This is due almost entirely to the form of brown rot disease known as blossom wilt, which for several years has spoiled the bloom, always plentiful enough to give a fair yield if it would set. Cutting out all possible dead wood every winter, and the use of fungicides in spring, have failed to prevent this trouble. I hope to have more success from spraying with a tar distillate wash, which will be tried in the coming winter. This treatment has given good results against brown rot of Plums

elsewhere. The trees are big enough to bear a lot of fruit; and President, being a late variety, always sells well, therefore it is worth taking some trouble over. Monarch does not make a very good show in the table; but it has often given better results in previous years. In 1920, for instance, it yielded 514 half-bushels. Czar almost crops itself to death, and is occasionally severely attacked by brown rot on the fruit and wood, but the trees show wonderful powers of recovery. It would seem from the table that I might reasonably look for a heavy crop of Plums next year, given favourable weather at blooming time. *Market Grower.*

FRUIT REGISTER.

PLUM COE'S GOLDEN DROP.

THIS dessert Plum is one of the autocrats of the fruit garden, and the high estimation in which it is held by fruit growers is seen in the free use they make of it in collections of choice dessert fruits, especially late in the season, for it will hang probably later than any other sort and is often stored in fruit rooms. Some connoisseurs are of the opinion that its acme of perfection is reached when it has been allowed to shrivel and become sugary, and such fruits are indeed very richly flavoured. The blossoms are more fertile than those of some other Plums, although it is best to plant the trees in proximity to other varieties that produce pollen freely. The tree is somewhat straggling in habit, but it makes good, robust growth. The colour of the fruit is rich amber, marked with red spots on the sunny side, and the shape is distinctly oval, tapering somewhat at the stem. This variety is best grown in the open on walls, and it will succeed on an east wall. In the orchard house, pot specimens almost invariably crop freely, and the example shown in Fig. 158 was exhibited this summer at one of the Royal Horticultural Society's meetings by Mr. J. C. Allgrove. The variety was raised at Bury St. Edmunds by Mr. Jervaise Coe, and the supposed parents are Green Gage crossed with Magnum Bonum.

OLD LATE APPLES OF MERIT.

IN view of the near approach of the planting season, growers will be well advised to include some of the old, well tried varieties of Apples in their collections. Many of the older varieties of Apples are unsurpassed in quality and much superior to some of those that have received awards in recent years.

Bull's Golden Reinette is an old variety of the Blenheim Pippin type, but with more colour. It is a very handsome Apple and of first-rate dessert qualities. The skin, which is very highly coloured on the side next to the sun, is streaked with brilliant crimson, the shady side being yellow with a few broken streaks of pale crimson, the whole of the surface being sparingly covered with grey dots. The flesh is yellowish, very tender, juicy and sweet. The tree is very hardy and free bearing. The fruits are useful both for culinary and dessert purposes and they keep sound in a cool store until May, although they are liable to shrivel in dry conditions.

Amphlett's Favourite is a little known, large, culinary variety grown principally in Herefordshire, and is in season up to Christmas. Hogg describes the fruits as being two-and-a-half inches wide and two inches high, but I have seen specimens in the market at Ross three to four inches high. They are roundish-oblate in shape with five prominent ridges around the crown. The skin is green with russet patches and bright red colour on the sunny side. The stalk is short and very slender. The flesh is greenish-white with traces of yellowish rings. It is very juicy, somewhat acid and of good flavour.

Winter Majetin is a fine late culinary Apple that will keep until the end of May. Although the tree is not a robust grower it is

a prolific bearer. The fruits are medium-sized with ribs around the crown. The skin is smooth, covered with dull red on the side next to the sun. The eye is closed and the stalk three-quarters-of-an-inch long. The flesh is greenish-white, firm, crisp, brisk and of pleasing flavour. This is an Apple which should be extensively cultivated because of its free-bearing qualities.

Another ever-cropping variety of merit is Betty Geeson, one of the latest keeping of all Apples, and I have known fruits to keep quite sound until July. They are of medium

dard, and does well in soils that suit Apples.

Syke House Russet and Old Nonpareil are two good, late dessert Apples. Of the latter, some very old trees are to be met with, and they give splendid crops. Another good, late dessert Apple that will keep until March is Court of Wick. The fruits are of a suitable size for dessert purposes, and the flesh is very crisp and highly-flavoured. Another valuable old, late Apple is Bess Pool, which is grown extensively in the Ross district and sells well in the local market. I have known this variety



FIG. 158.—POT TREE OF PLUM COE'S GOLDEN DROP.

size, flattish in shape, with obtuse ribs on the sides. The skin is smooth and shining, of a bright, yellow colour, with a flush of red on the side next to the sun. The eye is large and open; the stem half-an-inch long, slender, and set in a deep cavity. The flesh is white, tender and sweet. This variety of Apple is well adapted for cultivation in the bush form.

Brabant Bellefleur is one of the finest of all culinary Apples, the fruits being large, heavy, of regular contour, and variable in shape—roundish-ovate inclining to oblong or coned. This variety makes an excellent stan-

to keep splendidly until the end of May. This Apple makes a fine orchard tree grown as a standard, and the trees are very beautiful when in flower. The flesh is juicy, with a rich, vinous flavour.

Bringewood Pippin, which was raised by Thomas Andrew Knight from Golden Pippin crossed with Golden Harvey, is not generally known, but valuable on account of its late keeping, for it will remain sound until the end of April. The flesh is yellowish, firm, crisp, and sugary, and with a perfumed flavour. Hogg describes it as an excellent dessert Apple very much like Yellow Ingestre. *Pomona.*

A HISTORICAL NOTE ON SOME POTATO VARIETIES AND BREEDERS.

The Agriculturists' Manual, published in 1836 by Messrs. P. Lawson and Son, Edinburgh, contains a classified list of 146 Potato varieties cultivated at that date. Very few of these retain a place in modern agriculture. The common Yam is still grown in some districts, while Shetland Black and Irish Lumpers, which are cultivated on a small scale at the present time, may, with reasonable certainty, be stated to be identical with the varieties mentioned by Lawson under these names, although Lawson's description of the tuber of Shetland Black does not correspond entirely with that of the modern variety. Murphy* states that there is no reason to doubt that the Yellow Potato, frequently mentioned by Arthur Young, (1776-1779), is not identical with the variety bearing that name to-day. The above constitute the exceptions: the life of a commercial variety is normally short, not extending usually beyond twenty-five years.

Many factors operate in determining the period for which a variety may retain a place on the market. There is no doubt that varieties at times do decline in yielding power. This falling-off has been attributed in the past to ageing because of continued vegetative propagation. It has been demonstrated, however, that "degeneration" is primarily caused by the so-called virus diseases (Leaf Roll, Mosaic and Crinkle), and that there is no such thing as senility in Potatoes. The Potato may, nevertheless, "degenerate" in other ways, e.g., by the production of such vegetative variations as bolters and wildings. But although diseases and variations undoubtedly play an important role in determining the length of time during which a variety is cultivated, it must not be forgotten that popular fancy has also a strong influence. Many varieties have had short lives, due not to any want of intrinsic merit, but because they have failed in some way to attract the public attention. Public taste is a factor which varies much. It is not the same in any two countries, hence varieties which have found extensive cultivation in one country may be regarded as worthless in another: nor is it the same in one country at different periods. Even within a country there exist variations in taste. In eastern Germany, for instance, white skinned and white fleshed varieties are in demand, whereas in the western portion of that country, red-skinned, yellow-fleshed tubers find favour. Yield, palatability, and adaptability to the various methods of cooking are first considerations and the actual food value, based on the composition of the tuber, is not considered. In this matter it may be stated, therefore, that the public to some extent, leads the breeder, and not vice versa. Yet the public direction of Potato evolution is by no means complete: periodically, nature steps in and takes matters in hand. Disease epidemics determine in no uncertain manner which varieties may and may not be grown without risk of serious financial loss by all concerned.

Rees' *Cyclopaedia or Universal Dictionary of Arts, Science and Literature*, published in 1819, contains an article on Potatoes, in which it is stated that new varieties derived from the seed were frequently coming on the market at that time—a remark which might be made with even greater emphasis concerning any subsequent period. Since the introduction of the Potato, thousands of varieties have been cultivated in this country alone. It appears, therefore, that to trace the history of all varieties would be an impossible task, and it is the intention to limit the discussion in this article to such varieties as have had extensive cultivation or which are of importance in other ways.

Potato growing may be said to have been in its infancy during the eighteenth century, and so far as the production of varieties goes,

breeding on more or less scientific lines only began during the nineteenth century. The most epoch-making varieties which have been placed on the British market are: Ox-Noble, Rocks, Yam, Lapstones, Ashleaf Kidney, Cups, Fluke, Victoria, Early Rose, Magnum Bonum, Beauty of Hebron, Champion, Regent, Abundance, Up-to-Date, British Queen, Maincrop, Epicure, Duke of York, May Queen, Arran Chief, Great Scot, King Edward, Majestic and Kerr's Pink. A study of the history of Potato varieties, however, shows that while old varieties have been constantly replaced by new ones, there are distinct periods during which the activities of breeders have been more marked than at others. The great stimulus to Potato breeding in Britain during the nineteenth century, was the severe epidemic of blight which reached its climax in 1845, and which brought about a wholesale destruction of the crop, causing famine to prevail in Ireland. This circumstance, although of very great importance, was not the only factor which contributed to the remarkable activity in Potato breeding in the second half of the nineteenth century. During this period an enormous number of American varieties were imported into this country. All were great croppers, and, although few possessed high quality, all materially helped to swell our Potato supplies. Raisers were awakened to the need of doing something to counteract the flooding of our trade with American sorts, and worked energetically to produce varieties which would surpass these strangers in all points, being not averse to utilise the American types for breeding purposes. America, however, was not the only country from which Potatoes were imported; in the days before Magnum Bonum, thousands of tons of Potatoes were sent to Britain from Germany, Belgium and elsewhere. In the present century, a great renewal of activity amongst breeders has taken place as a result of the rapid spread of wart disease.

There exists no very definite records, so far as the writer is aware, concerning the introduction and origin of some of the older of the varieties mentioned, viz., Ox-Noble, Yam, Rocks, Lapstones, Ashleaf Kidney, Cups and Regent. A study of various lists, however, is sufficient to convince one of their previous importance. The Ox-Noble and the Yam were cultivated Potatoes before 1795*, and are mentioned in Lawson's *Agriculturist's Manual* (1836). The Rock Potato is probably the oldest on the market. It was grown originally in Ireland, and was stated to have been introduced into Scotland by Paterson in 1848. This variety appears to be synonymous with the Yellow Potato mentioned by Arthur Young. The Lapstone is not mentioned in Lawson's book, but it was in cultivation before 1811. It is mentioned in a classification appearing in *The Gardeners' Magazine* in 1882, and again by Fraser in his *Twentieth Century Potatoes*. Regarding the Ashleaf Kidney, which is considered by some authorities to be the same as Myatt's Ashleaf, there are records of a variety with such a name being cultivated in 1829†, although there is no certainty that the two varieties were identical. There is, however, no doubt that the old Ashleaf Kidney had a considerable vogue. The Cups, also mentioned by Lawson, would appear to have filled an important place during the first half of last century. Not much appears to be known about the Regent, which was a later introduction. It was raised by Walker and was a white, round variety. It appeared a few years earlier than 1881, and is considered to be the finest Potato, so far as quality goes, ever placed on the market.

Before going further, however, two varieties call for special treatment, viz., The Fluke and Garnet Chili. Of these two, the latter still retains a place in cultivation. The principal point of interest concerning these varieties is not the fact that they were extensively grown, but that they represent the parent forms from which a great number of varieties have

been directly or indirectly derived, not only in Britain but also in America, Germany and other foreign countries.

The Fluke and its Derivatives. The story of the origin of the Fluke is told in *The Gardeners' Chronicle*, (1858 and 1864) by E. Bennet. A certain J. Turner, handloom weaver and occasional farm worker, of Birch, near Middleton, Lancashire, first raised this variety from a "plum" taken indiscriminately from a field of Potatoes grown in 1841 on the Langley Hall Farm, near his residence. He sowed the seeds in his garden, and produced twelve plants, one of which was the Fluke. The others were discarded. He grew the variety for several years, and occasionally made presents of tubers to his friends. Amongst others he gave some to a neighbouring farmer who sold large quantities. Turner himself did not make any money by it, but in 1852, a subscription was got up on his behalf chiefly through the exertions of Oswald Dicken, surgeon, of Middleton, and John Lancashire, farmer, of Little Heaton. The amount raised was £115, and with it an annuity was purchased. The Fluke is supposed by some to have been a cross between the Pink-eye and Lapstone Kidney. According to Bennet, however, Turner never knew from what variety he took the "plum." The proprietor of Langley Hall Farm stated that he never grew Lapstone Kidney, and that the variety was not grown in the neighbourhood, but that at the time the seed was taken he was growing the Pink Eye to which the Fluke had some resemblance. The Fluke was extensively cultivated in its time. It was a late, white-skinned variety, fairly resistant to blight, and very commonly grown about 1854. The late Mr. A. Findlay, Mairsland, Auchtermuchty, has stated* that Paterson's Victoria was a natural seedling of the Fluke. If so—and there is no reason to doubt Findlay's work, as Paterson is known to have worked with the Fluke—and as the Fluke was about the only variety cultivated at that time which bore natural berries—then from the Fluke are known to be derived directly and indirectly, the following varieties: Victoria, Champion, Schoolmaster,† Maincrop, Langworthy's Golden Wonder, Up-to-Date, British Queen, Rector, Bishop, Jeanie Deans, Templar, Great Scott and Field Marshal. There is sufficient evidence to show that by his use of the Victoria as a parent, Fluke "blood" runs through all A. Findlay's varieties and their derivatives. The Victoria has been used largely by continental breeders.‡ It is the male parent of Richter's Emperor and Jewel, the former having been grown in this country under the name of Charles Fidler. Further, Richter's Emperor has been largely utilised for breeding purposes by other continental raisers.

Garnet Chili and its Derivatives. The severe epidemic of late blight in 1845 led the Rev. Channcey, Goodrich, Utica, New York, to conceive the idea that the Potato, as a result of long continued asexual propagation, had become so weakened in vigour as to be no longer able to resist successfully the attack of disease. He believed that it could be rejuvenated only through sexual reproduction, and begun to make his plans for the growing of seedling Potatoes with the idea of developing more vigorous and productive varieties that would be able very largely to resist disease. He obtained through the American Consul at Panama, in 1851, a small quantity of South American Potatoes for breeding purposes. Amongst this lot was a variety which, from its appearance and presumed place of origin, was designated Rough Purple Chili. From natural seed of this variety, produced in 1852, he grew some seedlings in 1853, and from these one was selected as being worthy of propagation. This seedling was introduced in 1857 under the name of Garnet Chili, which variety is still grown in some parts of America. T. P. McIntosh.

(To be concluded.)

* A. Findlay. *The Potato, its History and Culture*, 1905.

† Schoolmaster is stated to be a cross between Early Rose and Victoria in *The Gardeners' Chronicle*, 1878.

‡ Dr. K. Snell. *Kart offskorten*, 1923.

* P. A. Murphy. "Investigations on the Leaf Roll and Mosaic Diseases of the Potato." *Journal Dept. Agric. and Tec. Inst., Ireland*, Feb., 1924.

* Somerville (of Haddington). "The Best Kinds of Potatoes," etc. *Report of the Committee of the Board of Agriculture concerning the Culture and Use of Potatoes*, 1795.

† *The Gardeners' Chronicle*, 1889.

VEGETABLE GARDEN.

PARSLEY.

WHEN records are examined it is often surprising to find the amount of Parsley that is required by a moderate-sized establishment, and the demand is continual throughout the year. To provide for this demand frequent sowing of seeds and transplanting of the seedlings is one of the routine duties in the kitchen garden.

An early sowing may be made in January under glass, in light, rich soil. Boxes or pans are most serviceable receptacles for the purpose. The seeds will germinate in gentle warmth. Keep the young plants sturdy by affording them plenty of light. The seedlings may be planted out in pits or on warm borders where protection can be afforded them during inclement weather.

Parsley produces fine leaves of a rich dark green when grown in deeply-worked, rich land.

Dwarf varieties may be planted six or nine inches from plant to plant; the larger sorts may be afforded more space. A sowing may be made during February on a sheltered border. Many growers transplant the seedlings from this sowing between the rows of autumn-sown Onions, but this practice is not to be recommended in all cases. Rich soil may be able to support both crops: poor soil and a droughty season may spell disaster to both. If the object is to economise space, I would prefer to plant both Onions and Parsley thicker than usual rather than to inter-crop.

While dealing with this subject has it ever been proved that Parsley growing with Onions is beneficial to the latter? I seem to remember this subject being seriously discussed in the gardening Press. Parsley used as an edging to the vegetable quarters is attractive to the eye and convenient to gather. During April and May successive sowings may be made to supply plants to form the edgings, or seeds may be sown and the young plants thinned. July and August sowings will provide plants for the winter supply. A sheltered position should be selected for these sowings. During the autumn thin the seedlings, and it will often be found that complete plants drawn from the rows will be useful for the kitchen. This crop should be given protection during the winter. Some of the plants may be placed in pots and removed to cool pits or fruit houses; these will provide supplies which will be easy to gather during sharp frosts or heavy snows. *C. Ruse.*

GROUND LIMESTONE AS A CORRECTIVE OF CLUB ROOT.

THE almost tragic prevalence of club-root on some of the coal-measures soils of South Wales has forced the question of remedial measures upon my attention. Knowing that the disease works its worst effects on acid soils, I made an attempt to create alkaline conditions by the application of various forms of lime in various quantities. Quite the best results accrued from the use of ground limestone. I cannot claim that the disease was stamped out entirely, but it was reduced to such negligible proportions that I heartily recommend this substance to the notice of the numerous gardeners who have infected land. The application should be at the rate of four cwt. per one hundred square yards of ground, which is double the usual dressing of freshly slaked lime.

I prefer to make the application in autumn, whenever possible, certainly not later than the end of January, so that the substance may have ample opportunity to operate before the growing season begins.

Ground limestone is not yet an accepted item of horticultural practice but it will be in years to come. As an element of soil fertility it is of equal value to lime, better as a corrective of club-root, and possesses the added advantage of not deteriorating by storage. I may remark that all samples purchased should contain at

least ninety per cent. calcium carbonate and be of such fineness that not less than thirty-five per cent and not more than seventy per cent, passes through a sieve having one hundred meshes to the linear inch. *George H. Copley, N.D.H.*

ITALIAN CORN SALAD.

(*VALERIANELLA EROCARPA*, Desf.; French: Mache, d'Italie; Regence.)

This is quite distinct in plant, leaf and seed, and is larger than the ordinary Corn Salad. There are two varieties, one of which, known as Lettuce-leaved, is of a peculiar golden yellow tint, and runs to seed much later than the others. Both are sensitive to cold, and can only be grown successfully in warm, sheltered spots or in cold frames. The flavour is said to be superior to that of the usual type, and the uses are similar to those of the round-seeded varieties. *S. B. Dicks.*

HOME CORRESPONDENCE.

The Giant Cowslip.—I find that the Giant Cowslip referred to in my notes on the nursery of Messrs. Oliver and Hunter, in *The Gardeners' Chronicle* of October 10, was found by Capt. Kingston Ward, and not by Forrest, as there stated. *A.*

Cactus Dahlias.—I protest against the sweeping remarks of your correspondent, *H. S.*, on p. 275, as regards the Cactus Dahlia as a garden plant. True, there are varieties that do not show to advantage, owing to the shortness and weakness of the flower stem, but some of the Cactus varieties send their flowers well above the foliage, and when the plants are carefully staked and not disbudded few subjects can equal them for brightening the garden in their season, especially when viewed from a distance. In this garden we have a border planted with mixed varieties of Cactus, Single and Pompon Dahlias. While the singles and Pompons are excellent for supplying cut flowers for house decoration, the Cactus type is unsurpassed in the garden. One welcomes the Star and Mignon sections for massing where dwarf plants are required, but a well-grown plant of a good Cactus Dahlia will win most appreciation. A few good Cactus varieties are Border King, Edgar Jackson, General Smith Dorrien, Mary Purrier, Mrs. Douglas Fleming, Renmant and Flora Treseder. *John Borall, Old Cobwell Gardens, near Malvern.*

—In reply to Mr. George Taylor's letter which appeared in your issue of October 23rd, the following Cactus Dahlias have had R.H.S. awards, doubtless owing to the fact that they hold their flowers well above the foliage on stiff stems and that they are satisfactory as garden plants:—*Aene* (Highly Commended 1925), *Thr. G. van Tets* (1923), *Snowdrift* (1923), *Joyce Goddard* (1924), *Mrs. Forester Paton* (1924), *Mrs. Lowes* (1925). Among the broader-rayed types of Dahlias, *Princess Louise* and *Berengaria* have each had an Award of Merit. I do not doubt that it is possible to name sorts of a more showy character in other sections of Dahlias, but I would point out that I did not use the word "showy." My actual words were "of more value," by which I intended to convey "valuable for artistic effect." Everyone has his own ideas on this subject but at the time I had in mind the extremely effective grouping to which I referred. *J. E. G. White.*

Sulphate of Iron for Onion Mildew.—Mr. S. Heaton on p. 223 states that Onion mildew is easily kept in check by market growers by a dressing of sulphate of iron. Will he kindly state how it is applied; if dissolved in water and sprayed over the leaves, at what strength it is used, or, if not sprayed on the plant, in what way is it applied. So many growers have

their Onions ruined every year by mildew, that fuller information will be greatly appreciated. *C. West Stopham, Sussex.*

Missing Butterflies.—Your correspondents (pp. 252 and 317) remark on the scarcity of Red Admiral and Peacock butterflies this season, but the fact is no more unusual than the varying degrees of attack by insects. To quote a well-known example, each year we notice the varying prevalence of Tortrix caterpillars which defoliate Oak trees. The factors governing the ebb and flow of insect life are many, viz., abundance or scarcity of food plants; presence of or comparative freedom from natural enemies (specialised parasites and predaceous insects, insectivorous birds, reptiles, amphibians and mammals), climatic conditions, and the susceptibility to or immunity from diseases caused by bacteria, protozoa and fungi. Observations carried over a number of years show a periodic rise and fall of insect pests. By means of graphs it is possible to show the convergence of lines, where one represents the prevalence of a certain species and the other the factors governing decrease (Wave Law). When a species tends to reach its maximum fecundity, there are certain natural controls which act as retarding agents. The Peacock caterpillar is monophagous, i.e., restricted to one kind of plant—Stinging Nettle (*Urtica* spp.), and the Red Admiral has its choice of two—Stinging Nettle and Wall Pellitory (*Parietaria officinalis*). In such cases, the more restricted the diet the less chance a species has of becoming numerous. Both these butterflies hibernates in the adult stage, but the supply of Red Admirals is doubtless kept up by spring immigrants from the continent. *G. Fox Wilson, R.H.S. Laboratory, Wisley, Surrey.*

—The inquiries of your correspondents relating to the loss of these beautiful insects are quickly answered. Have not the gardening community been persevering for the past two generations to destroy all insect life, bird life, and garden animal life, too? Gardening literature is teeming with advertisements for the sale of innumerable insecticides and preparations against all members of the insect world, whether they are friends or enemies, and whilst waging destruction against a destructive pest there is the risk of slaying those insects, birds and animals which are the gardener's friends. If things proceed as they have been progressing in the past there will be no butterflies, bees, wasps or anything else but white fly in a generation to come! *J. Smith.*

—I should like to add my disappointment of the absence of Red Admirals and Peacock butterflies in the garden as stated by Mr. S. B. Dicks (p. 252). In these gardens we had quite a number of hibernated females on the wing in the spring. I cannot help but think that the exceptional dry June had much to do with their scarcity. I found plenty of small caterpillars on Nettles early in June, but by the end of that month the chrysalids and full-grown caterpillars had all disappeared. I cannot help but think that the dry weather (which was exceptionally dry for June) caused a scarcity of food for birds, who in turn devoured the hairy caterpillars of these species and collected every swinging chrysalis. In support of this theory the ravenous state of sparrows which completely cleared Gooseberry bushes of sawfly caterpillars (a pest they seldom devour) leads me to this conclusion. *C. F. Wood, The Warren Gardens, Hayes, Kent.*

Runner Beans.—Is twenty-three-feet a record height for Scarlet Runner Beans? When visiting a friend, in the middle of September last, my attention was drawn to a row of Runner Beans which were planted at the foot of a wall of a storehouse, which is thirty-feet high. To this building my friend has the aerial and earth wires of his wireless set fixed. The Bean, which was planted close by the earth-wire, had entwined around it and climbed it to a height of twenty-three-feet, and was bearing good pods at eighteen-feet from the ground. *C. J. D.*

SOCIETIES.

IMPERIAL FRUIT SHOW.

It has become the custom, in recent years, for particular trades and industries such as the confectioners, brewers, dentists, etc., to hold an exhibition annually in their respective spheres, and the Imperial Fruit Show may be said to represent the annual show of the commercial fruit growers of this country as well as affording opportunity for growers in distant parts of the Empire to bring before the notice of the British public samples of the fruits they are enabled to export to us. As originally inaugurated at the Crystal Palace, these shows at first included classes for amateurs as well as traders, but the exhibition has become a purely commercial one and has now very little interest for private gardeners.

A fruit exhibition in October suits the season of the home grower, but apparently it only coincides with the season of the Canadian Apple grower, for other chief fruit producing centres of the Empire—South Africa, Australia and New Zealand—were only represented by Oranges. That these shows have done much to stimulate the consumption of more fruit in this country may scarcely be doubted, and as an advertisement of the fruit-growing industry, both at home and in the colonies, they fill an important place. But probably the greatest good resulting from them is in the educating of the home grower to better methods of placing their wares on the market, for in the past our systems of packing and grading were lamentably behind those of more enterprising growers; especially in America. That the need for reform is urgent is obvious by the insistence of our own Board of Agriculture on the need for improved methods of marketing home-grown fruits, and the Ministry of Agriculture has identified itself with these exhibitions, lending its powerful organisation to make them a success.

The exhibition, which opened at Holland Park Hall on the 30th ult. and continued until the 7th inst., was one of the best of the series. It was formally opened by the Minister of Agriculture, Mr. Edward Wood, M.P., who was congratulated by several speakers on his recent appointment to the Viceroyalty of India. Mr. Wood emphasised the opportunity that the show gave to the fruit-growing industry, with the help of the public, to make a very definite contribution to the prosperity of agriculture. In 1924, he stated, the home production of the principal fruits was about 44 per cent. of the total requirements of the country; the Overseas Empire production about 16 per cent. and the foreign production 40 per cent. He would like to see a very big cut made in the 40 per cent. He did not claim to be an expert, but nobody could walk round a show like that without being impressed by the dominant importance of standardising, grading and packing.

With regard to the show, the total number of entries was 711, as compared with 510 last year and 382 the first year. There were 46 exhibitors with 181 class entries in the Kent and Southern section, and nearly as many in the Eastern and Northern section. Gardeners will take special pride in the fact that Mr. A. J. COBB, formerly gardener to Reginald Cory, Esq., at Duffryn, and now Horticultural Superintendent to the Reading University College, won the large gold cup offered by Messrs. Dingley's, Ltd., Manchester, for the best exhibit of dessert fruits, and he also won the gold medal of the Royal Horticultural Society and the gold medal offered by Messrs. Ridley and Houlding for the best four half-sieves of Cox's Orange Pippin Apple in the United Kingdom section.

The opening day of the exhibition was beautifully fine and visitors were fairly numerous. The hall was well filled with exhibits, even the gallery being requisitioned for displaying some of the classes. Many ornamental kiosks were put up by traders in Covent Garden and of these the chief were

those of Messrs. GEO. MONRO AND CO., LTD., Messrs. GEO. COLMAN, LTD., Covent Garden, Messrs. RIDLEY AND HOULDING, THE GOVERNMENT OF ONTARIO, THE DOMINION OF CANADA, NOVA SCOTIA, Messrs. R. E. JENKINSON, LTD., Covent Garden. Exhibits of fruits and fruit trees were made by the BARHAM NURSERIES, Messrs. LAXTON BROS., Messrs. W. SEABROOK AND SONS, LTD. Messrs. BRINKMAN BROS. and Mr. WILL TAYLER. Smaller ones were utilised by makers of insecticides, washes, baskets, boxes and punnets; scales and weighing machines; cultivators, etc. The most important exhibit of sundries was shown by Messrs. G. H. RICHARDS LTD., and was awarded a Gold Medal.

The MINISTRY OF AGRICULTURE and several horticultural institutes had exhibits of an educational nature and one of the most interesting was the display of the LONG ASHTON RESEARCH STATION, Bristol, including Cider Apples and a cider press showing the actual making of Cider. The LONDON COUNTY RETAILERS, FRUITERS' AND FLORISTS' ASSOCIATION had fruits on sale the following prices of Apples giving an index of their popularity: Blenheim Pippin, 5d. lb.; Charles Ross, 6d. lb.; Cox's Orange Pippin, 8d. lb.; Worcester Pearmain, 5d. lb.; Allington Pippin, 4d. lb.; and Mackintosh, 6d. lb. It will thus be observed that apart from Cox's Orange Pippin, the greatest value was placed on the American Mackintosh variety. The exhibits of Apples, which formed the principal feature of the show, were displayed in boxes, barrels and baskets. The fruits from Canada were arranged in boxes forming a double row across the width of the hall and in some cases home growers also displayed their fruits in boxes, but much the finest exhibits in this section were in baskets in the gallery. In some cases the fruits had undergone a journey by rail before they were opened and this afforded the judges an opportunity of observing the quality of the packing.

HOME-GROWN APPLES.

The classes for home-grown Apples were divided into four sections: (1) Kent and Southern Counties; (2) Eastern and Northern Counties; (3) West and Midland Counties; and (4) Ulster. After these had been judged the best exhibits collectively were taken and of these the following were the result: the best four boxes of Cox's Orange Pippin; first, Mr. A. J. COBB, University College, Reading (R.H.S. Gold Medal); four boxes of Worcester Pearmain; first, Mr. S. W. MOUNT, Canterbury (R.H.S. Gold Medal); four boxes of any other market variety; first, Mr. F. PAGET NOBBURY, Sherridge, Malvern, for Jonathan (Silver-gilt Medal of the Fruiterers' Co.); four half-sieves of Cox's Orange Pippin; first, UNIVERSITY COLLEGE, Reading (Gold Medal presented by Messrs. Ridley and Houlding); four half-sieves of any other market variety; first, Mr. J. MORTON, Newent, Gloucester, with Worcester Pearmain (Silver Challenge Cup); seven half-barrels of Bramley's Seedling; first, HOLLESLEY BAY LABOUR COLONY (gold medal presented by *The Fruit Grower*); seven half-barrels of Newton Wonder; first, Mr. H. G. KLEINWORT, Boughton Monchelsea (Gold Medal); seven half-barrels of Lane's Prince Albert; first, Mr. S. W. MOUNT (Gold Medal); seven bushels of Bramley's Seedling; first, Mr. MOUNT (Silver Challenge Cup); seven barrels of Newton Wonder; first, Mr. G. F. GUTHRIE, Paddock Wood, Kent (Gold Medal presented by Messrs. Ridley and Houlding); seven bushels of any other market variety; first, Mr. A. E. MORTON, Wisbech, with King Edward (Silver Challenge Cup); seven boxes of Bramley's Seedling; first, Mr. MOUNT (Gold Medal presented by *The Fruit Grower*); seven boxes of Newton Wonder; first, Messrs. W. SEABROOK AND SONS, LTD., Chelmsford (Silver Medal of the Fruiterers' Company); seven boxes of Lord Derby; first, Mr. S. W. MOUNT (Gold Medal); seven boxes of Lane's Prince Albert; first, HOLLESLEY BAY LABOUR COLONY (Gold Medal); half-sieve of any dessert Apple which appears to the judges to follow the Worcester Pearmain in

season: first, Mr. J. D. LANE, Bidford-on-Avon, with the variety William Crump (Silver Challenge Cup); Mr. COBB won the large Gold Cup offered by Messrs. Dingley's, Ltd., for his four half-sieves of Cox's Orange Pippin; and Mr. MOUNT won the Deacon Gold Medal with seven bushels of Bramley's Seedling; the Poupart Silver Cup, for his four boxes of Jonathan; and the Silver Challenge Cup, offered by Messrs. Murphey and Son, Ltd., for the best exhibit in the United Kingdom section.

There was a small section for produce grown under glass, including Grapes, Tomatoes, and Cucumbers, but nothing very exceptional was forthcoming.

The judging was conducted on rather unusual lines. The judges were arranged in many distinct sets, and each set proceeded to award points for one of the different qualities, such as "Attractiveness and Style," "Bulge," "Alignment," and "Compactness" in the packing, and "Best Commercial Size," "Colour," "Uniformity in Colour and Size," and "Quality" in the fruits themselves. Each exhibit was pointed, and the prizes were awarded on the aggregate of points. In packing each of the six stated qualities was given a maximum of five points, but for the fruit the points varied. Ten points were the maximum for size and edible quality, and fifteen points for uniformity of colour and size in both dessert and culinary varieties. Colour was worth up to twenty-five points in dessert varieties and ten in the culinary sorts, while "Condition—freedom from bruise and blemish and skin quality and finish" was given a maximum of fifteen points in dessert fruits against twenty-five in the culinary varieties. The perfect box of Apples did not materialise in the United Kingdom Section, but several of the first prize exhibits were very close to the maximum of points.

The first three sections of the Schedule of Prizes was devoted to Kent and the Southern Counties, the Eastern and Northern Counties, and to the Western and Midland Counties, and there were fifteen classes for Apples in each. No doubt in order that the critical might compare the fruits from the three different parts of the country the corresponding classes were set out together, so that the visitor saw, in a long row, all the boxes of Cox's Orange Pippin, for example, from the whole of the country.

DESSERT APPLES.

As might be expected, Cox's Orange Pippin was the most popular dessert Apple, while the largest entries—thirteen lots of four boxes—came from the Kent and Southern Counties Section. While all the fruits bore a strong family likeness, there were considerable differences in appearance, both as regards form and colouring, and although in no case was the maximum points awarded for size and colour, the very best boxes were of high quality. The failing, if any, was in that the fruits were a trifle larger than the ideal size. Otherwise the general run of these many boxes was especially good. In the Kent and Southern Counties Section Mr. A. J. COBB, University Gardens, Reading, won both the first and second prizes, the R.H.S. Gold Medal, and the Dingley Gold Cup with his superb boxes of Cox's Orange Pippin which were deservedly pointed nearly to the maximum. The alignment and bulge of these and also those of Messrs. WM. SEABROOK AND SONS, Eastern Section, and Mr. J. MORTON, Western Section, were especially admirable. These first prize winning exhibits were naturally composed of fruits of brilliant colour which, if not quite so intense as in the Colonial produce, possessed the additional attraction of a rich yellow tinge that tells of high flavour.

Curiously enough, the variety Worcester Pearmain was not nearly so extensively shown as the Cox's, despite its popularity with growers. But the general quality of the exhibits was perhaps a trifle higher. The majority of the exhibits were especially well-packed, the bulge and alignment were ideal, and the colour very rich. Mr. S. W. MOUNT, Canterbury, Mr. J. MORTON, and Mr. R. STEPHENS were the three first prize winners.

The classes for four boxes of any market dessert variety other than the two above-named was responsible for competitions which varied considerably both as regards quality and variety. The best were very good, but only about one half was equal to a good exhibition standard, though grading was a generally strong feature. The varieties mostly shown were Blenheims, King of the Pippins, Charles Ross, Rival and Allington Pippin. The fruits of Charles Ross were almost invariably too large for high class dessert purposes, and the Blenheims were of dull and uninviting appearance. In the Kent and Southern Counties Division the first prizes were awarded to boxes of almost uncannily perfect fruits of Winter Quarrenden. Each row, composed of fruits of ideal size and deep crimson colour, was as nearly identical with its neighbour as possible. In the Eastern Section the first prize boxes were of Ribston Pippins, which, later in the season, would be excellent eating. At the moment their appearance was all that could be desired. This very fine exhibit was from the HOLLESLEY BAY LABOUR COLONY. Boxes of Jonathan, fully equal in all respects to the very best Colonial fruits, shown by Mr. F. P. NORBURY, were first in the Western Section.

The half-sieves of dessert Apples were placed in the gallery, where, it is feared, they did not receive the admiration their many qualities deserved, for, as a rule, they were filled with excellent fruits. In the classes for four half-sieves of Cox's Orange Pippin there were four exhibits from the Western Division, fourteen from the Eastern and sixteen from Kent and the Southern Counties, and here ninety-eight per cent. of possible points were awarded to Mr. A. J. COBB's wonderful fruits from the University College, Reading. The HOLLESLEY BAY COLONY were first in their division with fruits almost equal in high merit, and Mr. J. MORTON, the other first prize winner, also had very admirable fruits.

As with the boxes of Apples, the half-sieves of any other dessert Apple showed an interesting variety, though the general quality was higher, and the grading especially good. Of the twenty-six exhibits from Kent and the Southern Counties the best was one of Worcester Pearmain, of very even size and intense colouring, shown by Mr. S. MOUNT. The HOLLESLEY BAY LABOUR COLONY were again first in their division showing excellent Ribston Pippins, which bore exceptionally rich colour. Mr. J. MORTON also, was again first in his division, and his admirable Blenheims were beautifully coloured. For general high quality this was the best class in the divisions under review.

CULINARY APPLES.

The stipulated methods of showing the cooking Apples were in half-barrels, in bushels and in boxes, and seven receptacles were required in each class. The first and last named were placed on the floor of the hall. While the method has its advantages and close adherents, barrels do not lend themselves to such attractions as the other method of packing, nor is it possible to grade and pack the large culinary fruits with such precision as with the smaller dessert varieties.

Bramley's Seedling could be shown either green or coloured, and so far as quality was concerned there was little to choose between the two types, though the green fruits were generally the more even in size, but the coloured type usually appealed most to the judges. The green type of this useful Apple was seen most in the Kent and Southern Counties Division, where the samples of both types were good, and the packing rather better than elsewhere. The first prize was won by Mr. S. MOUNT. The HOLLESLEY BAY LABOUR COLONY and Mr. J. MORTON also continued their successes, and in both exhibits the fruits were of very attractive colouring.

The barrels of Newton Wonder were rather uneven as a whole, but the first prize winning lots were especially good. Lane's Prince Albert was better and in the Kent and Southern Counties Division, the general quality was high. Mr. MOUNT was first. There were fewer exhibits from the Eastern and Western Section, but the

HOLLESLEY BAY LABOUR COLONY and Mr. J. MORTON won the first prizes with admirable produce.

In the gallery the long array of bushels of the cooking Apples made an attractive display. The Bramley's Seedling were mostly coloured fruits, and generally the pack was very well done. Of the many exhibits from Kent and the Southern Counties excellent bushels from Mr. S. MOUNT were first, and most of those from the Eastern Section were also highly creditable.

Fourteen bushels of Newton Wonder were shown from Kent and the South, while the West had six representatives, and the East only three. The Any Other Variety class for bushels brought many different varieties, and the first prize exhibits were of Lane's Prince Albert, from Canterbury, and King Edward in the other two classes. In the Western Section there was an exhibit of immense fruits of Warner's King, but, unfortunately, the fruits were rather badly bruised.

Although the boxed fruits of Bramley's Seedling were generally of good quality, of even size, well-coloured and skilfully packed, none received the maximum points, and in some instances the bulge was too great, and in others there was a loose top layer of fruit. The chief offenders in bulge were in the Eastern Section, and some of the Western samples were also badly packed. But the usual first prize winners, Mr. J. MORTON, Mr. S. MOUNT and the HOLLESLEY BAY LABOUR COLONY had excellent exhibits.

The bulge was too prominent in many of the exhibits of Newton Wonder, and this was most noticeable in the samples from the Western Counties. The general quality was highest in the Eastern Section, where Messrs. W. SEABROOK AND SONS were first. In the Kent and Southern Section, the READING UNIVERSITY COLLEGE had well-graded and highly-coloured fruits.

Lord Derby Apple did not seem to be in great favour with growers as it was not so largely shown as the other two varieties. In the Western Section there was only one exhibit, and this was not worthy of the first prize awarded to it. In the other two Sections the first prize boxes were commendably good.

Lane's Prince Albert varied greatly in size, but the average quality was very good. In the Western Section the fruits were relatively small but very even, while the Kentish samples were often highly coloured.

Only two classes were devoted to the Ulster Section, and these proved to be quite ample for the exhibitors as there were but six in the class for Bramley's Seedling and only three of any other variety, where Lane's Prince Albert was first, and Lord Derby second. The Ulster growers have much to learn before they can compete seriously with the rest of the Empire.

OVERSEAS SECTION.

This comprised four divisions and the ASSOCIATED GROWERS OF BRITISH COLUMBIA gained most of the important prizes. This Association swept the board in the British Columbia section, whilst in the Ontario, Quebec and New Brunswick Sections the ONTARIO FRUIT GROWERS won nearly all the prizes and the UNITED FRUIT GROWERS OF NOVA SCOTIA gained all the awards given in the Nova Scotia section.

The Apples from the Dominions were of exceptional quality; each fruit seemed as though it had been turned out of a lathe and the surface polished. The colours varied greatly and in most cases were an intense red, in the deeper coloured fruits mahogany or maroon. The varieties are now fairly well known to this country and the chief were Cox's Orange Pippin, Yellow Newton, King, a big red Apple not in the least like our King of the Pippins; Golden Russet, a fruit of very pleasing appearance; Greening, a fine, evenly-shaped fruit, somewhat of the shape of Newton Wonder with a little blush on the sunny side; Stark, like a big Cellini; Worcester Pearmain, which is much more conical than the fruit as we know it, and striped with crimson on a deep red ground; Mackintosh Red, probably the pick of the Overseas variety for quality, and Jonathan.

ROYAL HORTICULTURAL.

NOVEMBER 3.—Notwithstanding the late date there was a good display of flowers, plants and fruits at Vincent Square on the above date. Chrysanthemums were fairly numerous but not so overwhelmingly present as is usual at the first meeting in November. Roses, Carnations, Orchids, Violets, alpine plants and trees and shrubs contributed to the attractions of the show. Two groups were of special interest, the one from the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham, consisting of a comprehensive collection of cut branches of autumn-fruiting hardy shrubs; the other consisted of fruits in great variety and of good quality from Sir C. NALL-CAIN (gr. Mr. T. Pateman), Bocket Hall.

Orchid Committee.

Present:—Sir Jeremiah Colman (in the Chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. Brooman White, Mr. C. J. Lucas, Mr. H. T. Pitt, Mr. Fred. K. Sander, Mr. H. G. Alexander, Mr. J. E. Shill, Mr. Charles H. Curtis, Mr. A. McBean, Mr. T. Armstrong, Mr. E. R. Ashton, Mr. J. Wilson Potter, and Mr. S. W. Flory.

AWARD OF MERIT.

Sophro-Laelio-Cattleya Lucifer (L.-C. Majestic × S.-L.-C. Anzac). A very fine flower of large size and good form and one that would pass for a good Laelio-Cattleya. The lip is intense deep purple with a mauve rim; the sepals and petals are rosy purple and of good substance. Shown by Messrs. J. AND A. McBEAN.

GROUPS.

In the group set up by Messrs. SANDER there were large plants of *Oncidium pulvinatum* with arching spikes of soft yellow flowers, fine examples of *Cattleya Peetersii* alba, *C. Phrygia*, *C. Sylvia* var., *Queen Elizabeth*, *C. Freda*, *Sanders* var., with white flowers, and *C. Mrs. Gratrix*, also white. Interesting plants included *Masdevallia Boeking* Hybrid of intense crimson colour; *Maxillaria picta*, *Trichopilia coccinea*, now something of a rarity; *Stenoglottis fimbriata*, *Odontoglossum grande*, and the quaint *Bulbophyllum Careyannum*.

Messrs. STUART LOW AND CO. showed a few plants set in Maidenhair Ferns; their leading subjects were *Cattleya Fabia*, *C. Annette*, the yellow-petalled *Laelio-Cattleya Yellowstone*, and the equally bright *L.-C. Radina*; *Oncidium Papilio*, the unspotted *Odontoglossum grande aureum* *Pittianum*, and the interesting *Oncidium porrigens*, with small brown flowers.

Messrs. J. AND A. McBEAN's little group contained delightful plants of *Cattleya Bellona* albens, *Laelio-Cattleya Profusion* of good form; *L.-C. Zena*, with four big blooms, *Cypripedium Royalty*, and the handsome *Odontoglossum scintillans*, derived from *O. Rossii* and *O. Wilckeanum*, and showing its *O. Rossii* origin in a marked degree.

BARON SCHRÖDER (gr. Mr. J. E. Shill), The Dell, Egham, showed a four-flowered spike of an exquisitely beautiful Orchid named *Cattleya Esther Waldegrave*, obtained by crossing *C. gigas* var. *Firmin* Lambeau with *C. Astron*; save for a little lemon colouring in the lip it is wholly white; another striking hybrid canary yellow with old gold, soft rose and yellow lip is *Brasso-Laelio-Cattleya Elektron* the result of crossing *Cattleya Hardyana* alba with *B.-L.-C. The Baroness*; a single flower was shown of *Cattleya John Henry*, named after Baron Schröder's grandson, and obtained by crossing *Cattleya Astron* with *C. Lady Rowena*; the flower is of large size and good form, white with lemon shading in the throat of the frilled lip.

A wonderfully fine collection of paintings of terrestrial Orchids was arranged by Mr. H. M. Godfrey. The paintings were grouped under *Orchis*, *Serapias* and *Serapia* hybrids, *Orchiserapias*, *Ophrys*, *Epipactis* and *Bigenie* Hybrids. The collection was of horticultural and botanical interest, and it attracted a great deal of attention.

Floral Committee.

Present (Section A).—Mr. Henry B. May (in the Chair), Mr. J. F. McLeod, Mr. A. Turner, Mr. Wm. Howe, Mr. Donald Allen, Mr. D. Ingamells, Mr. W. H. Page, Mr. M. C. Allwood, Mr. F. G. Cousins, Mr. James B. Riding, Mr. F. Streeter, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. Chas. E. Pearson, Mr. G. W. Leek and Mr. H. R. Darlington.

(Section B).—Mr. Charles Musgrave (in the Chair), Mr. Gerald Loder, Mr. James Hudson, Mr. G. Reuthe, Mr. George Harrow, Mr. W. R. Cranfield, Mr. C. Williams, Mr. Reginald Cory, Mr. F. G. Preston, Mr. A. Bedford, Mr. T. Hay, Mr. G. Yeld, Mr. Clarence Elliott, Mr. E. A. Bowles, Mr. E. H. Wilding, Mr. W. G. Baker, Mr. W. J. Bean, Mr. R. C. Notcutt, and Sir William Lawrence.

AWARDS OF MERIT.

Acacia platyptera.—This species, which was introduced from the Swan River in 1840, belongs to the type which has no true leaves but is furnished with well-marked phyllodes which perform the same functions. It is a dwarf, somewhat spreading, little bush and bears solitary, usually opposite, heads of pale orange-yellow flowers on short stems. Shown by Mrs. CHARLES WILLIAMS, Greenway, Churston, Devon.

Acacia suaveolens.—The "Sweet-scented Acacia" is a graceful evergreen growing to about six feet in height in the southern parts of Australia. It bears a slight resemblance to the better known *A. longifolia* though the phyllodes are not so long, being from four to six inches in length and slightly curved. The sprays exhibited were plentifully supplied with good, axillary spikes of fragrant, canary-yellow flowers. Also shown by Mrs. CHARLES WILLIAMS.

Chrysanthemum Mary Godfrey.—A large, Anemone-flowered variety. The cushion of disc florets is white, and the broad, ray florets, which droop a little at the tips, are lightly flushed with mauve. Shown by Messrs. W. GODFREY AND SON.

Chrysanthemum Ondine.—A large bloom which has little but size to recommend it. It is presumably an incurved variety, but we suspect some Japanese parentage. The form was not equal to the best exhibition standard, and the blooms were neither green nor white but a rather unpleasant mixture. Shown by Messrs. KEITH, LUXFORD AND CO.

Chrysanthemum Mrs. R. F. Felton.—A valuable Japanese variety of market size. The straight, rich crimson-cardinal florets have plenty of substance, and the blooms should remain fresh when cut for a considerable time. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

GROUPS.

Young plants and cut sprays of Conifers were the principal feature in the hall, and these included a great many interesting species and varieties. In a large floor group Messrs. WATERER, SONS AND CRISP had splendid specimens of *Retinospora filifera aurea*, *R. argentea*, and *Cupressus erecta aurea* of rich colouring. A number of *Abies* of perfect shape included *A. concolor*, *A. nordmanniana* and *A. homoclepis*. A interesting variety of well berried Hollies, and some bushes of *Azalea pontica* with foliage of vivid, autumn colour, were also shown.

The many uncommon Conifers grouped by Mr. G. REUTHE included *Fitzroya patagonica*, *Podocarpus Totara*, *P. macrophylla*, *Callitris rhomboidea*, *Agathis (Dammara) australis*, *Taiwania cryptomerioides*, several species of the East African *Widdringtonia* and *Phyllocladus*. Mr. REUTHE also showed a collection of *Nerines* and a few *Liliums*.

Conifers were associated with large pans of alpenes by Mr. CLARENCE ELLIOTT. The evergreens were of the type valued for the rock garden, and included some exceptionally large, and perfectly grown, upright Irish Junipers and *Picea albertiana conica*. The alpenes were mostly colonies which have long been established in their large pans. The many sorts included *Gentiana sino-ornata*, and *G. acaulis*, bearing many rich yellow flowers, *Androsace Watkinsonii*, a number of *Saxifragas*, *Armeria*

caespitosa, *Ramondia pyrenaica*, *Dianthus Adoree* and *Samolus repens*.

At the end of the hall the Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree, set up a large collection of cut sprays of hardy shrubs. Barberries predominated, and in addition to many named varieties there were some attractive seedlings. Brilliant colour was provided by a large stand of *Euonymus europaeus aldenhamensis* and the large crimson fruits of *Crataegus diffusus*, and *C. cognata*. A vase of *Prunus Laurocerasus Zabeliana* was well-flowered and the uncommon blue fruits of *Decaisnea Fargesii* also attracted attention.

A collection of *Clematis* bearing quite good flowers was displayed by Messrs. L. R. RUSSELL LTD., with various evergreen shrubs and Australian *Dracaenas*. Mr. KLINKERT had a small collection of topiary specimens, and the Misses HOPKINS built an attractive little rock garden.

Particularly bright and fresh collections of Carnations were arranged by Messrs. STUART LOW AND CO., Mr. C. ENGELMANN, and Messrs. ALLWOOD BROS. Their good varieties included Laddie, Red Laddie, Eileen Low, Sir Philip Sassoon, Surprise and Cottage Maid, a medium-sized fancy variety, lightly flushed with Apple blossom pink in the centre of the flower.

Very good Roses were displayed by Messrs. ALEX. DICKSON AND SONS, and the Rev. J. H. PEMBERTON. The varieties Betty Uprichard, Lady Inchiquin and Shot Silk, were finely shown by the Irish firm, while Vanity and Isobel were included in Mr. PEMBERTON's exhibit.

Mr. CHARLES TURNER was able to stage excellent blooms of Dahlias even so late in the season as the present time. His interesting exhibit included flowers of the Collette, small Paeony and small Decorative types. Mr. J. J. KETTLE included in a good exhibit of sweet Violets Princess Mary, a long-stemmed, single variety of large size, and Admiral Avellan of deep pink colour. In anticipation of the Annual Show of the National Chrysanthemum Society, later in the week, several growers had collections of Chrysanthemums.

An unnamed exhibitor set out particularly good paintings of *Rhododendron dichroanthum*, *cinnabarinum*, *R. Roylei*, *R. arboreum* and other species. Various shrubby *Spiraeas* and herbaceous *Astilbes*, *Lilium regale*, *Berkheya purpurea* and other valuable garden plants. Miss OKENDEN showed a few paintings which included representations of German Irises, *Strelitzia Reginae* and *Callistemon speciosus*.

Fruit and Vegetable Committee.

Present.—C. G. A. Nix, Esq. (in the Chair), Messrs. W. Poupert, J. Cheal, H. S. Rivers, W. Lobjoit, H. V. Taylor, S. B. Dicks, G. F. Tinley, A. Metcalfe, E. Beckett, E. Harriss, E. Neal, H. Markham, J. Wilson, W. H. Divers, J. Harrison, E. A. Bunyard, and A. N. Rawes.

Several seedling Apples were submitted for award, and although one or two were promising, none appeared to be superior to existing varieties. One of the best of the new Apples was Joybells, which has already received the R.H.S. Award of Merit.

GROUP.

The only collection was an exhibit of fruits, including Apples, Pears, Raspberries and Grapes from Sir CHARLES NALL-CAIN's gardens at Bocket Hall, Hatfield (gr. Mr. T. Pateman). This exhibit was very attractively displayed, pot Crotons being employed as decorations with *Ampelopsis* foliage and Oak leaves. Of Pears there were good specimens of Glou Morceau, Winter Nelis, Chas. Ernest, and Beurré Alexander Lucas. The Apples included choice specimens of Bramley's Seedling, Beauty of Kent, Tyler's Kernel, Royal Jubilee, Blenheim Pippin, Striped Beefing, Lord Derby, St. Edmund's Pippin, King Harry, Rival, and the new Laxton's Superb. The Raspberry shown was Heytor, a late fruiting variety which originated in Sir Charles Nall-Cain's gardens. Of the Grapes, there were excellent bunches of Black Alicante, and Appley Towers, also a fine bunch of Muscat of Alexandria, with splendidly finished berries of the rich amber colour associated with high quality in this Grape.

Obituary.

James Whitton.—After an illness extending over a period of two months, Mr. James Whitton, V.M.H., late Director of Parks under the Glasgow Corporation, died at his residence, Bellahouston House, on Friday, October 30. Deceased, who was in his 75th year, was born at the Gardens, Methven Castle, Perthshire, where his father held the position of head gardener for nearly fifty years, and in June 1865, he began his training at Thirlestoun Castle, Lauder. On the completion of his apprenticeship he went as fourth journeyman to Glamis Castle just when the new gardens formed by the Earl of Strathmore were becoming famous. Two years later he was promoted foreman, and he continued in that position until 1876, when he was appointed gardener to Mr. James Houldsworth, at Coltness, Wishaw. After eleven years residence there, he returned to Glamis to take charge of the gardens, and remained there until he received the appointment of Superintendent of Parks to the Corporation of Glasgow, a position which he filled with distinction for about thirty years, and retired therefrom two years ago. With the growth of the city during his long period of office Mr. Whitton's duties became multifarious in character and far-reaching in scope. When he came to Glasgow the only parks in the city were Kelvin Grove, the Green, Queen's Park, Alexandra Park and Cathkin Braes, the combined area of which was approximately 420 acres, and as showing the remarkable development that has since taken place, it is interesting to note that Glasgow now possesses thirty-one parks whose combined area extends to 2,707 acres, exclusive of Ardgil estate, which is 14,740 acres in extent. With the addition of five golf courses, bowling greens, tennis courts, football and hockey pitches, as well as innumerable playgrounds for children, the expenditure of the department has increased six-fold, and now represents an annual outlay of a quarter-of-a-million sterling. With the wide knowledge acquired in the fields of horticulture and arboriculture, Mr. Whitton's advice and services were in frequent demand, both as a consultant and judge, his services in the latter capacity including exhibitions held at St. Petersburg, Dusseldorf, Ghent, Brussels, and Christiana. He was closely associated with the Glasgow and West of Scotland Horticultural Society for many years, and held the honorary position of vice-president of the Scottish National Sweet Pea, Rose and Carnation Society since its formation. In an advisory capacity he was responsible for the designing and planting of numerous public and private grounds, of which the railway hotels at Turnberry and Gleneagles are examples. Mr. Whitton also devoted much time and attention to forestry, and he gave his services freely to the Royal Scottish Arboricultural Society of which he was a vice-president. He took an active part in the arrangements of the forestry section of the Highland and Agricultural Show recently held at Glasgow, while his experience and knowledge have been of great value to the Scottish Consultative Committee on Forestry, of which he was a member. About twelve years ago the distinction of the Victoria Medal of Honour was conferred upon him in recognition of his work in horticulture. There was a distinct personality about Mr. Whitton. He was methodical in every thing pertaining to his work, and while his memory was retentive he relied on his carefully written records. Bird life was a natural attraction, and apart from botanical studies he had one or two little hobbies, such as the collection of china, crystal and glass ware, and he was very proud of his library, which contains many rare and valuable works on horticulture. It was his wish that the books be maintained as a collection, and he informed the writer during one of the many enjoyable talks round the fireside at Bellahouston that he had made provision for its transference to the Mitchell Library. Mr. Whitton is survived by his wife, a widowed daughter, and a widowed daughter-in-law, his only son, a captain in the 7th Scottish Rifles, having been killed at Gallipoli.

AN APPRECIATION.

By the death of James Whitton at his home in Bellahouston Park, Glasgow, on the 30th ult., one of the most outstanding personalities in the British Public Parks community has passed from our midst. During the whole of the time he was in charge of the Glasgow Parks he stood for all that was best and most up-to-date in public park administration. His unflinching courtesy to strangers visiting the Glasgow Parks, his willingness to give advice to all who sought it, and his ready sympathy with those in need of it, has enshrined his memory in the hearts of hosts of horticulturists all over the world.

Never will I forget the first occasion on which I met him, when on a visit to Scotland some twenty odd years ago. Being anxious to see and learn something of Glasgow's open spaces, I ventured to write and ask him if he would allow one of the members of his staff to show me over what he considered a few of his best parks. By return of post I received a personal letter from him asking me to call at his office on a certain day at a given hour when he would be pleased to meet me and afterwards act himself as my guide. My first visit to the Glasgow Parks was a red letter day in my experience, and was made so merely by the presence of James Whitton. Although his junior by a considerable number of years, and at the time only the head of a newly-formed parks department in the south, yet he, the chief of the most important Parks Department in the British Isles, treated me as if our positions were reversed. This, from my after experience of him, was characteristic of the man—he never put on "side" himself and despised it in others. From my very first acquaintance with him he was placed upon a pedestal in my estimation from which in all our after intercourse he was never removed.

Whitton always had the courage of his convictions, and even to those in authority over him expressed them sometimes almost brusquely. On the other hand he was ever the ideal official in that once having given his views on a subject he carried out the desires of his Committee most loyally, even when he thoroughly disagreed with them. His criticisms regarding his fellows were always honest and direct, sometimes pungent, but never malicious.

He was a man who absolutely lived for his work and was never happy unless his hands were fully occupied. Many of his friends felt that at his age he was ill advised to take up so much work after his retirement from the Directorate of the Glasgow Parks. Nevertheless, those who knew him best realize that had his mind not been taken up with the work that was so congenial to him, the probabilities are that he would have died earlier.

Although for so many years a civic park official and a thoroughly experienced administrator (as the series of informative articles he wrote on public park work for this journal some years ago bear testimony), his interests were first and foremost those of a cultivator and a practical horticulturist. This fact was fully appreciated by the R.H.S. some years ago when they awarded him the V.M.H. So far as I am aware, Whitton is the only municipal park official whom they have ever thought worthy of this distinction.

The high esteem in which he was held by those in authority is shown by the fact that he was a Justice of the Peace for many years before he died. This is an honour that is but rarely bestowed upon an official while he is still in the service of a municipality.

The sympathy of all their friends will be with Mrs. Whitton and her daughter in their time of deep affliction. P.

SCHEDULES RECEIVED.

BURTON-ON-TRENT AND SHORNALL CHRYSANTHEMUM SOCIETY.—Thirty-fifth Exhibition to be held in the Town Hall, on Saturday, November 14.—Secretary, Mr. T. M. Vaughan, 137, Forest Road, Burton-on-Trent.

BLACKBURN AND DISTRICT HORTICULTURAL SOCIETY.—Chrysanthemum show to be held in King George's Hall, Blackburn, on Friday and Saturday, November 13 and 14.—Secretary, Mr. W. Beesley, Park Crescent, Blackburn.

MARKETS.

COVENT GARDEN, Tuesday, November 3rd, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated)					
	s. d. s. d.		s. d. s. d.		
Adiantum cuneatum per doz.	10 0-13 0	Erica gracilis, 48's per doz.	24 0-30 0		
—elegans ...	10 0-12 0	—nivalis, 48's per doz.	24 0-36 0		
Aralia Sieboldii ...	9 0-10 0				
Araucarias, per doz.	30 0-42 0	Above varieties in 60's, per doz.	12 0-15 0		
Asparagus plu-mosus ...	12 0-18 0	—In Thumbs, per doz.	9 0-10 0		
—Sprengeri ...	12 0-18 0	Marguerites, 48's per doz.	15 0-18 0		
Aspidistra, green	36 0-40 0				
Asplenium, per doz.	12 0-18 0	Nephrolepis in variety ...	12 0-18 0		
—32's ...	24 0-30 0	—32's ...	24 0-36 0		
—nidus ...	12 0-15 0				
Cacti, per tray, —12's, 18's ...	5 0-7 0	Palms, Kentia ...	30 0-48 0		
Chrysanthemums, pot grown, in variety, 48's per doz.	15 0-24 0	—60's ...	15 0-18 0		
Crotons, per doz.	30 0-45 0	Pteris, in variety 10 0-15 0			
Cyclamens, 48's, in variety, per doz.	24 0-30 0	—large 60's ...	5 0-6 0		
Cyrtomium ...	10 0-25 0	—small ...	4 0-5 0		
		—72's per tray of 15's ...	2 6-3 0		
		Solanums, 48's per doz.	12 0-15 0		

Cut Flowers, etc.; Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Acacia (Mimosa), per bun. ...	1 0-1 3	French Flowers— —Narcissus, Soliel d'Or, per doz. bun. ...	4 0-5 0
Adiantum deco- rum, doz. bun. ...	9 0-10 0	—Parma Violets, per bun. ...	4 0-5 0
—cuneatum, per doz. bun. ...	6 0-8 0	—Chillies, red and yellow, per pad doz. ...	4 0-5 0
Arums (Richardias), per doz. ...	5 0-7 0	—Solanum berries, per pad ...	8 0-10 0
Asparagus plu- mosus, per bun. long trails, 6's ...	2 0-3 0	Gardenias, per box, 12's, 18's ...	6 0-9 0
med. sprays ...	1 6-2 6	Heather, white, per doz. bun. ...	10 0-12 0
short ...	0 9-1 3	—pink, per doz. bun. ...	9 0-12 0
—Sprengeri, per bun. long sprays ...	1 6-2 0	Honesty, per doz. bun. ...	18 0-30 0
med. " ...	1 0-1 6	Lilium longiflorum long, per doz. ...	3 6-4 0
short " ...	0 4-1 0	—speciosum album, long, per doz. ...	3 6-4 0
Bouvardia white, per doz. bun. ...	12 0 15 0	—short, per doz. doz. ...	0 0-4 0
Camellias, white, per box, 12's ...	2 6-3 0	—speciosum rubrum, long, per doz. blooms ...	2 6-3 0
Carnations, per doz. blooms ...	2 0-4 6	—short " ...	2 0-2 6
Chrysanthemums white, large blooms, per doz ...	5 0-6 0	Lily-of-the-Valley, per doz. bun. ...	24 0-36 0
—yellow, large blooms, per doz ...	5 0-6 0	Orchids, per doz. —Cattleyas ...	36 0-48 0
—pink, large blooms, per doz ...	5 0-6 0	—Cypripediums ...	5 0-7 0
—bronze, large blooms, per doz ...	4 0-5 0	Roses, per doz. blooms, Rich- mond ...	3 6-5 0
above colours— —medium blooms, per doz. ...	2 6 3 6	—Liberty ...	3 6-4 0
—white spray per doz. bun. ...	15 0 18 0	—Madame Butter- fly ...	2 6-5 0
—yellow, spray, per doz. bun. ...	8 0-12 0	—Mme. Abel Chatenay ...	2 6-3 6
—pink spray, per doz. bun. ...	9 0-12 0	—Melody ...	2 6-5 0
—bronze spray, per doz. bun. ...	9 0 12 0	—Molly Sharian Crawford ...	2 6-4 0
Croton leaves per doz. ...	0 9-2 6	—Opheia ...	2 6-4 0
Fern, French, per doz. bun. ...	10 0-12 0	—Sunburst ...	2 6-4 0
French Flowers— —Acacia (Mimosa), per doz. bun. ...	12 0-15 0	Scabiosa caucas- lica, per doz. bun. ...	6 0-7 0
—Marguerites, yel- low, per doz. bun. ...	2 6-3 0	Smilax, per doz. trails ...	3 0-3 6
—Narcissus, Paper White, per doz. bun. ...	3 0 4 0	Statice, mauve ...	6 0-8 0
		Stock, English white ...	6 0-8 0
		Violets ...	2 6-5 0

REMARKS.—There has been a glut of bunch Chrysanthemums during the past week and only pot-grown varieties have realised a normal price, such as Source d'Or, Jean Patterson, Market Red and Lizzie Adeock. Bunch spray white has realised better prices. Outdoor blooms were difficult to clear at any price, especially on Saturday morning, the majority being very poor in quality. Disbudded blooms, with the exception of pink sorts, have been sufficient for the moderate demand. A good selection of single varieties is available, disbudded blooms being very fine in quality and consisting of white, pink, yellow, bronze and red varieties. Carnations and Roses show little change from last week. Carnations have somewhat varied in quality owing to the mild weather and only blooms from the new crop could be recommended for sending on another journey. The weather conditions have been more suitable for Roses, which are still arriving in excellent condition although a trifle finer in price. Richardias (Arums) and Lilium longiflorum are much improved in quality, with a further reduction in price. White and pink L. lancifolium is less plentiful. Other subjects show little change from last week. Larger consignments are now coming to hand from the South of

France. The newest subjects are single mixed Anemones, yellow Narcissus Soliel d'Or, Narcissus Paper White, yellow Marguerites, Acacia (Mimosa) and Parma Violets. There are also arriving pads of Eucalyptus, Ruscus, Myrtle and French Fern.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Batavia	2 0-2 6	Onions—	
Beans—		—Dutch	6 0-7 0
—Forced, per lb.	0 8-1 3	—English, per cwt.	7 0-8 0
—Scarlet Runner,		—Valencia	9 0-10 0
bushel	3 6-6 0		
Beta, per cwt. ...	6 0-8 0	Parsnips, per cwt.	6 0-7 0
Cabbage, per tally	7 0-12 6	Potatoes—	
Celery, per doz.		—King Edward,	
fans	16 0-24 0	per cwt.	5 0-7 6
Cauliflowers, per		—others	4 0-5 0
doz.	3 0-4 0		
Carrots, per bag	6 0-7 0	Sprouts, per 4 bag	3 0-5 0
Chicory, Belgian		Savoys, per doz....	1 9-2 6
per lb.	0 4-0 5		
Cucumbers, per doz.	5 0-6 0	Tomatoes, English,	
—Flats, 36's, 42's	16 0-17 0	per strike—	
Dutch Onions ...	8 0-9 0	—pink, new crop	7 6-10 0
Endive, per doz.	1 6-2 6	—pink, old crop ...	3 0-6 0
Horseradish, per		—blue	3 0-6 0
bundle	2 0-3 6	—Guernsey	3 0-6 0
Lettuce, Cos, doz.	1 6-1 9	—Jersey	2 6-4 0
—cabbage	1 0-1 9	—Dutch	2 0-3 0
Mushrooms, cups	2 6-3 0	—Canary Island, 22	6-25 0
—Brokers	1 6-2 0	Turnips, per cwt.	5 0-5 6
—"Field"	1 0-1 6		

REMARKS.—Some slight improvement has been noticeable in the general demand during the past week. Hothouse Grapes have been a shade better trade in spite of large quantities of cold-house Grapes from Holland, Belgium, and Guernsey. The orchard fruit section is quiet, although there is a fair demand for top-grade dessert and cooking Apples. Cucumbers are a slightly better market. Tomatoes are a good trade, prices for the fruits of the new crop making considerable headway. Canary Island Tomatoes are selling fairly well. Mushrooms are variable in quantity and show some fluctuations in values. Guernsey Beans and New Potatoes are a steady trade, but the open weather tends to depreciate prices. Green vegetables are plentiful and cheap. Trade in old Potatoes remains unchanged.

GLASGOW.

TRADING in the cut flower market was not so good last week neither as regards turnover nor prices. The retail business was quieter, and as there was no diminution in the supplies, price movements were in a downward direction until Friday, when a steadier tone prevailed. There was no falling off in the quantity of Chrysanthemums reaching the market, and the average values for the week work out as follows:—Sprays: Well's White, Loan's crimson, pink and yellow, 6d. to 7d. per bunch; disbudded: yellow and white Thorpe, 16 to 20 for 6's; ordinary blooms, 1½ to 16; La Pactole, 10d. to 13; Delores, 8d. to 1½; Admirante, 7d. to 1½; Cranford Yellow, 10d. to 13; Betty Spark, 4d. to 7d.; Framfield White, 6d. to 8d. Carnations ranged from 2 to 4; Richmond and Mme. Abel Chatenay Roses, 3 to 4; Madame Butterfly, 3½ to 5; and Mrs. Herbert Stevens, 2 to 3. Lilliums were just steady at 4 to 5 for L. longiflorum (Harrisii) and Richardias, and 2 to 3 for L. lancifolium rubrum. Good Michaelmas Daisies made up to 10d. per bunch, while ordinary ranged from 2d. to 6d. Violets sold at 2 to 2½ per dozen, and Parma Violets at 2½ to 3 per bunch. Mimosa realised 1½ to 5½ per cane. So much as 3½ per bunch was paid for extra large Asparagus foliage, while ordinary fluctuated from 6d. to 16 according to size.

A feature of the fruit market was the buying of Nuts for Halloween trading. Brazils commanded 11½ per stone; Walnuts, 18; Filberts, 6d. per bag; Cob Nuts, 9½ per stone; Pea Nuts, 4 to 6; French Chestnuts, 4 to 6, and Italian Chestnuts, 7. If anything, prices for Apples were easier. Jonathan was worth 12 to 15 per case; McIntosh Red, 12 to 14; Newton, 13 to 17; York Imperial, 26 to 30; per barrel; King's, 30 to 35; Canadian Baldwins, 26 to 32; Jonathan, 29 to 34; Ben Davis, 22 to 26; Greening, 26 to 30; and Scarlet Pippin, 28 to 31½. Nova Scotia King's No. 1 made 22 to 25; No. 2, 20 to 22; No. 3, 15 to 17; and Domestic, 17 to 21; English Bismarck, 17 to 20 per cwt; Warner's King, 18 to 22; Bramley's Seedling and Lane's Prince Albert, 16 to 20; Black's Winter Nells Pears averaged 16½, and Anderson's, 17½. Grape Fruit declined sharply, and ranged from 18 to 23½ per case; and Oranges were also cheaper, South Africans at 24 to 26, and Jamaica's at 20 to 21½. An easier tendency was reflected in the quotations for Grapes. Scotch Muscats being worth from 2 to 3½; English, 2 to 3; Belgian, 2 to 2½; English Colmars, 1½ to 2½, and Kippen Fruit, 3 to 3½.

Scotch Tomatoes advanced to 11d. per lb., and Cucumbers rose to 8 to 10 per dozen. Cauliflowers sold at 2 to 5 per dozen. Lettuces made 1½ to 1½, and Leeks 1 to 3.

CATALOGUES RECEIVED.

WALTER VOSS AND CO., LTD., Millwall, E. 14.—Soil sterilizers.
W. DRUMMOND AND SONS, LTD., Stirling, Dublin.—Forest, ornamental, and fruit trees, etc.
W. SMITH AND SON, LTD., Aberdeen.—Forest, ornamental, and fruit trees, etc.
J. CHEAL AND SONS, LTD., Lowfield Nurseries, Crawley, Sussex.—Roses; trees, shrubs, climbers, etc.
BACKHOUSE NURSERIES (YORK) LTD., York.
MORE AND CO., LTD., 150-155, Finchley Road, N.W. 3.—Plants and roots, etc.; wooden tubs, etc. (Wholesale).
HURST AND SON, 152, Houndsditch, E. 1.—Vegetable and flower seeds.
G. H. RICHARDS, LTD., 234, Borough, S.E. 1.—XL ALL horticultural specialties.

Foreign.

SLUIS AND GROOT, Enkhuizen, Holland.—Seeds.

TRADE MARKS.

THE following list of latest Trade Marks published is specially prepared for *The Gardeners' Chronicle* by Rayner and Co., Registered, Patent and Trade Mark Agents, of 5, Chancery Lane, London, who will give all information free regarding the Registration of British and Foreign Trade Marks.

NORCO.

462,180.—Fertilisers for Horticultural and Agricultural use. Charles Norrington and Co., Ltd., Chemical Works, Cattedown, Plymouth. October 21, 1925.

CHULA.

461,708.—Agricultural and Horticultural Machinery, and parts of such machinery—Tyneside Foundry and Engineering Co., Skinnerburn Road, Low Elswick, Newcastle-on-Tyne. October 14, 1925.

MORTEGG.

461,236.—Chemical Substances used for Agricultural, Horticultural, Veterinary and Sanitary purposes, but not including Poultry Medicines or the like.—Murphy and Son, Ltd., The Cedars, Sheen Lane, Mortlake, London, S.W.14. October 7, 1925.

The above Marks have been "accepted" by H.M. Patent Office, and unless any objection is lodged the Marks will be duly Registered.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

- 25682.—Tangent Tool Engineering Co., Ltd.,—Motor-mowing-machines. October 14.
25723.—Akt-Ges für Anilin-Fabrikation.—Insecticide. October 14.
25722.—Farbwerke, vorm. Meister, Lucius, and Bruning.—Dressing seeds. October 14.
24711.—Burr, W.—Turf-cutting machine. October 5.
24899.—Diehl, J.—Lawn-edge trimmer. October 6.
24826.—Marston C.C.—Weed-remover. October 6.

SPECIFICATIONS PUBLISHED.

- 240,764.—Moebs, A.—Machines for distributing artificial manures.
233,656.—Ketterer, E.—Heating of and supply of carbonic acid to hot-houses or hot-beds.
239,973.—Halsted, A. G.—Devices for the protection of growing plants.
239,551.—Adelantado, L.—Manufacture of phosphate fertiliser.

GARDENING APPOINTMENTS.

Mr. J. Bakewell Smith, late gardener to Col. HOBART, D.S.O., at Westcliff Hall, Hythe, near Southampton, and previously to the EARL OF ONSLOW, at Clandon Park, Guildford, as gardener to General KAYS, C.M.G., at Firgrove House, Farnham, Surrey.

Mr. T. Reay, for the past five years gardener to Mrs. CHARLES HUNTER, Hill Hall, Epping, as gardener to Sir PHILIP SASSOON, Bt., M.P., Trent Park, New Barnet, Herts.

Mr. W. Watts, as gardener to KENNETH H. WRIGHT Esq., Watlands House, Scaynes Hill, Haywards Heath. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. W. Cole, for the past six-and-a-half years gardener to General Sir RICHARD HARRISON, at Ashen Manor, Exeter, Devon, as gardener to the same gentleman at Maypool House, Galmpton, Brixham, Devon. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. J. Cross, for the past ten years with the late Sir EVERARD A. HAMBRO, K.C.V.O., Hayes Place, Kent, as gardener to Sir ALFRED GOODSEN, Waddeton Court, Brixham, South Devon.

Mr. C. E. Saunders, for seven years gardener to Col. PARAVICINI, St. Vincent, Grantham, Lincoln, as gardener to His Grace the DUKE OF SOMERSET, Maiden Bradley, near Bath, Somerset. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

ANSWERS TO CORRESPONDENTS.

APPLE WITH BROWN SPOTS UNDER THE SKIN. *E. G. S.* The fruits are affected with bitter-pit disease, caused by a fungus, which is often associated with a canker disease on the young branches. Remove all diseased fruits and destroy them by burning. Cankered shoots should be cut off below the seat of the disease, and these also should be burnt. Next spring spray the trees with Bordeaux mixture just before the buds burst and again after an interval of five weeks.

COPPER BEECH TREE INFESTED WITH A WHITE FUNGUS. *J. F.* You are in error in assuming that the white, foreign matter on your Beech trees is a fungus. Your trees are attacked by an insect, *Cryptococcus fagi*, known as the Beech coccus. The best remedy is paraffin emulsion, to which has been added a solution of caustic soda at a strength of one pound in ten gallons of water. Spraying should be done for two or three seasons, and should be undertaken so soon as the pest is noticed. The trunk and main branches should be scrubbed with a wire brush, or a stiff scrubbing brush, dipped in the emulsion.

GRAPES UNSATISFACTORY. *A. B. C.* Your Muscat of Alexandria Grapes appear to have set badly and in one or two cases spot disease was present on the berries. We suspect that the temperature of the vinery has been kept too low. Next season use a little more fire heat when necessary and attend strictly to cultural details.

HYACINTHS WITH BASAL GROWTHS. *J. H. B.* The growths at the base of your Hyacinth bulbs are bulbets. It is possible that in lifting the old bulbs you severed some of the basal portion with the trowel or mice may have damaged them in store. The propagation of Hyacinths in this manner is put to use by growers in Holland, and if you refer to *The Gardeners' Chronicle* for May 1 and May 9, 1903, you will find supplementary illustrations showing how Hyacinth bulbs are propagated in this manner, in the one case by "notching" and in the other case by "scooping," of which latter your bulbs are an example.

MELON SEEDLINGS GERMINATING IN THE FRUIT. *J. W.* The germination of seeds in Melon fruits is not unusual, and cases have been recorded before in *The Gardeners' Chronicle*. The seeds of other fruits sometimes germinate in this way.

NAMES OF FRUIT. *J. K.* 1, Newton Wonder; 2, Wealthy; 3, Chelmsford Wonder; 4, not recognised; 5, Allington Pippin; 6, Baumann's Reinette; 7, Court Pendu-Plat; 8, Colonel Vaughan. *M. C.* Charles Ross. *F. A. A.* 1, Smart's Prince Arthur; 2, Fearn's Pippin; 3, Ribston Pippin; 4, Hertfordshire Pearmain; 5, Allington Pippin; 6, Easter Pippin; 7, Grange's Pearmain; 8, Cellini; 9, King of the Pippins; 10, Dumelow's Seedling. *E. S. B.* Mahbot's Pearmain. *C. H.* French Codling.

NAMES OF PLANTS. *J. C. G.* *Trachymene coerules.* *C. McA.* *Cobaea scandens*, *A. C.* *Papaver nudicaule*; yellow flower, *Erysimum Perofskianum*, not a Wallflower, but nearly related thereto. *F. S. O.* *Phytolacca decandra*. *F. J.* 1, *Panacratium illyricum*; 2, *Begonia* President Carnot; 3, *Hieracium aurantiacum* variety; 4, *Helianthus* Miss Mellish; 5, *Helianthus rigidus*; 6, *Senecio tanguticus*; 7, *Santolina Chamaecyparissus*; 8, *Rosmarinus officinalis*; 9, *Achillea mongolica*. *S. O.* 1, *Philomis fruticosa*; 2, *Teucrium fruticans*; 5, *Muehlenbeckia complexa*; 6, *Stachys lanata*; 7, *Sedum spectabile*; 8, *Senecio tanguticus*; 10, too scrappy for identification; 11, *Nicotiana Tabacum*. *W. G.* *Lycasteria formosa*. *Devonia*. Probably *Salvia involucrata*. *A. B.* 1, *Gaultheria Shallon*; 2, *Senecio tanguticus*; 3, *Andromeda floribunda*. *S. P. S.* *Lycasteria formosa*.

PRIMULA LEAVES UNHEALTHY. *A. F.* The leaves are affected with red spider. It is probable that the plants are growing in a dry, hot situation. Primulas need plenty of moisture, and enjoy a damp rooting medium during the summer. If red spider appears next season, spray the plants with water on frequent occasions.

ROSE SHADES. *O.* The shades or protectors used to preserve Rose blooms from damage by rain, wind or sun, are sold in two sizes, the larger being 10½ inches in diameter and 9 inches in depth, and the smaller one, 7½ inches in diameter and 7 inches in depth. You may obtain these shades from Mr. John Pinches, 3, Crown Buildings, Crown Street, Camberwell, S.E.5.

RHODODENDRON CAMPYLOCARPUM. *K. K. K.* There is no trace of disease or insect pest on the leaves enclosed. It is evidently a cultural trouble. Probably, being newly planted, the roots suffered from want of water during the hot, dry spell of weather we had in June and early July. Remove the flower buds in the hope that there is still sufficient life left in the plant to produce new leaves. Elms have gross surface-feeding roots, and we fear you will have difficulty in cultivating Rhododendrons in such a position for any length of time.

SHRUBS FOR AN OXFORD QUADRANGLE. *E. H.* The following shrubs will be suitable for your purpose:—North and North-East—*Hydrangea petiolaris* (scandens) white, June; *Lonicera Heckrottii*, cream and rosy-pink, June-July; *Lycium chinense*, reddish-purple, May, June; *Pyracantha Rogersiana*, white, red fruits, May; *Viburnum plicatum*, white, May; and *Colutea arborescens*, yellow, May-July. South—*Osmanthus Delavayi*, white, April, May; *Teucrium fruticans*, lavender, June-August; *Styrax Wilsonii*, white, April; *Styrax japonica*, white, May; *Fendlera rupicola*, white, tinted pink, May-June; *Fabiana imbricata*, white, June; and *Viburnum Henryi*, white, red fruits, June. East—*Ceanothus dentatus*, blue, April-May; *Choisya ternata*, white, May-September; *Cotoneaster horizontalis*, white, red fruits, May; *Jasminum officinale* major, white, May-August; *Sophora viciifolia*, mauve, May-June; and *Trachelospermum jasminoides*, white, June-July. West—*Abelia triflora*, rosy-white, June; *Ceanothus rigidus*, blue, April-May; *Clematis Albert Victor*, lavender, May-June; *Clematis* Mrs. Quilter, white, May-June; *Cydonia japonica cardinalis*, dark red, March-May; *Cydonia japonica*, Knap Hill Searlet, March-May; *Dipelta floribunda*, tinted pink, May-June; and *Stranvaesia salicifolia*, white, red fruits, May-June. You should have stated the height of the wall. The foregoing shrubs are not all strictly climbers, but are suitable for growing against a wall.

VIOLA AND VERONICA. *M. N.* It is very doubtful if your Viola has ever had a distinctive name; it is apparently a seedling which has been propagated by cuttings for most of the self flowers come fairly true from seed, and are sold by seedsmen to colour. It is evidently a useful bedding variety though of no commercial value as a new sort. The Veronica is evidently *V. Andersonii*, though it is difficult to be certain about it, for so many garden hybrids have been raised on the continent in the past twenty years which are so nearly alike in colour that it becomes difficult to distinguish them unless one sees the entire plant. These Veronicas are not hardy save in sheltered positions or favoured districts; in the majority of cases they require a little protection during the winter, very much like the shrubby *Calceolarias*, in fact they are propagated and grown under exactly similar conditions.

Communications Received.—*A. W.*—*W. A.*—*W. P.*—*S. A.*—*A. J. C.*—*T. W.*—*R. K. H.*—*H. C.*—*D. C.*—*M. de N.*—*A. M.*—*E. P.*—*E. B.*—*A. T. S.*—*J. A. C.*—*C. H. G.*—*J. J. K.*—*W. F. & C.*—*W. J. L.*—*Broadway.*—*W. P.*—*J. E. G. W.*—*E. M. B.*—*E. H.*—*H.*

THE Gardeners' Chronicle

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 42.3°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 11, 10 a.m. Bar. 30.4 Temp. 40°. Weather Wet.

other micro-organisms—can go on piling up alcohol till the medium in which it is growing contains some 17%, a concentration which is apt to prove "too much of a good thing" to its rivals. Although, however, the protective function of alkaloids is a plausible enough hypothesis, when put to the test of experiment it would seem to break down. For example, Messrs. Theron and Cutter, of the School of Agriculture, Potchefstroom* have brought forward experimental evidence which shows that the protective power of nicotine is not sufficient to save the Tobacco plant from attack by various pests—eelworm, aphides and bacteria. Having been compelled as a result of their observations to regard the prevalent theory with suspicion, they very properly set about an inquiry into the actual part which nicotine does play in the economy of the plant. They find that as the Tobacco plant grows so its nicotine content steadily increases and that the increase goes on up to the flowering stage. When that stage is reached, however, the nicotine contained in the plant tissues undergoes a rapid decrease and with seed formation there is a still further decrease in the amount of nicotine. The actual quantity contained in the plant is not unnaturally influenced by the vigour of growth, which, in turn, is favourably affected by the addition of phosphatic and potassic as well as nitrogenous fertilizers. From these facts the authors reach the conclusion that nicotine serves the Tobacco plant as a store of nitrogenous food. Presumably the nicotine is decomposed by the plant as it passes into the flowering stage and the nitrogen which it contains is incorporated in the living tissues. These observations, on which this hypothesis is based, lead in any case to conclusions of practical importance. When grown for nicotine extraction the Tobacco plant should be harvested before it has begun to dissipate its stores of the alkaloid; but when grown for Tobacco the plant should be encouraged to get rid of the excess of this product so that the leaves shall contain the right and small amount of the drug which apparently both gives the maximum of pleasure to the smoker and inflicts on him the minimum of harm.

New Bridge at Hampton Court.—Regular visitors to Hampton Court Palace and its gardens will learn with interest that the Surrey County Council has approved the scheme for a new bridge across the River Thames at Hampton Court. It is anticipated that, subject to an agreement with the Ministry of Transport and the Office of Works, a small portion of the Palace grounds will be made available for the construction of the new bridge.

Dutch Tomatos.—A quarter-of-a-century ago the average Dutch family had never tasted a Tomato, but nowadays, Tomatos are found on the dinner table of rich and poor alike, and Holland is cultivating and exporting Tomatos in great quantities, mainly to England and Germany. Westland, south of the Hague, is the great district for the culture of Tomatos, and other vegetables, under glass. Glass culture makes it possible to market Tomatos from the middle of April until the end of November. A visit of Dutch growers to England in 1902, says the *Monitor*, resulted in the founding of an expert control bureau for supervising the selection and packing of the fruits, which are now divided into three grades depending on size and weight. These Tomatos must be of equal ripeness, without blemish, packed in layers, and the net weight stated on the boxes.

*South African Journal of Science, XXI., p. 180, 1924.

Coloured Post Cards of Kew Gardens.—Four additional sets of picture post cards, in colour, are now on sale at the Royal Botanic Gardens, Kew. These comprise a set of stove and greenhouse plants, included among which are varieties of Hippeastrum and greenhouse Cyclamen; two series of rock garden and hardy herbaceous plants, among which are beautiful pictures of the Bluebells and Daffodils in the woodland, and a very fine group of Gentiana verna in the rock garden, and a pan of Saxifraga Grisebachii. There is also a set of Himalayan Rhododendrons, including R. arboreum and R. barbatum. In all these post cards the natural colours have been very faithfully reproduced.

National Chrysanthemum Society's Show, 1926.—The National Chrysanthemum Society has made arrangements to hold its annual exhibition in 1926 on November 4 and 5, at the Royal Horticultural Hall, Westminster.

The Blackmore Centenary.—In the Thames Valley district a special effort is being made to raise the necessary £200 in order to place the proposed replica of the medallion in Exeter Cathedral in the Free Library at Teddington, and establish a fund for a prize to be annually awarded amongst the children of the district for the best essay on R. D. Blackmore and his novels. It will be remembered that following several years residence in the neighbouring town of Twickenham, Mr. R. D. Blackmore lived at Teddington for forty-two years, during which time he grew Pears extensively and wrote thirteen novels, including "Lorna Doone."

The New Minister of Agriculture.—The King has been pleased to approve the appointment of the Rt. Hon. Walter Edward Guinness, D.S.O., M.P., to be Minister of Agriculture in succession to the Rt. Hon. E. L. Wood, M.P. Mr. Guinness has done excellent work as Financial Secretary to the Treasury. He is the third son of Lord Iveagh, and was a member of the Conservative Government in 1922, as Under Secretary for War, a year later he became Financial Secretary to the Treasury, and when the Conservative party was returned to power last year, Mr. Guinness was selected for his old post at the Treasury.

Export of Horticultural Produce.—According to the Ministry of Agriculture, the export trade in horticultural produce from this country is slowly but steadily increasing. During the year ended March 31, 1924, the number of certificates issued was 1,700, compared with 807 certificates issued in the year ended March 31, 1922. The increase in the amount of the inspection work may be gathered from the fact that during the year ended March 31, 1924, 982 consignments were examined, as compared with only 374 in the year ended March 31, 1922, and 482 in the year ended March 31, 1923. In addition, during the year ended March 31, 1923, 115 inspections of Potatoes for export to Algiers and Uruguay were carried out, which involved the examination of some 7,000 tons of Potatoes. In the following year eighty inspections, covering some 3,000 tons, were carried out.

The Carrot Fly.—In a leaflet* published by the Ministry of Agriculture on the Carrot fly, it is recommended to spray the plants with paraffin emulsion made by dissolving 1 lb. of soft soap in one gallon of boiling water, and whilst still hot add two pints of paraffin and churn the mixture thoroughly. When required for use one gallon of this mixture should be added to nine gallons of water. Rain water or water that is not very hard should be used. The Carrots should be sprayed shortly before, and again just after thinning. Another specific is a mixture of green tar oil and precipitated chalk, in the proportion of one part of the oil to one hundred parts of the chalk. The *Bulletin* states that pressing the earth closely around the stems tends to prevent the flies from egg-laying. This may

* Leaflet No. 38. Ministry of Agriculture, 10, Whitehall Place, S.W. 1.

THE rôle of alkaloids, of which class of substance **Nicotine:** which class of substance **Waste Product** plants produce many kinds, **or Plant food?** is still an unsolved problem of plant physiology. Many of the alkaloids are highly poisonous substances and hence it is not surprising that the view is often expressed that they serve a protective purpose, defending the plant which makes them from attack by animals to which the alkaloids are toxic. The direct evidence in support of this view is, it must be confessed, somewhat meagre. It is, of course, easy to imagine that the plant which has contracted the habit of manufacturing alkaloids should come to possess a high degree of tolerance toward the poison. This biological method of defence against attack by animals would, moreover, seem to be practised very generally by plants. Yeast, for example, when growing in the absence of oxygen—that is, in conditions where it is likely to encounter severe competition from

be done immediately after the plants are thinned by treading both sides of the rows. Young Carrots removed during the operation of thinning should be removed so soon as possible; thinning is best done in the evenings after sundown when the flies are not active.

The Hay Crop.—According to the Ministry of Agriculture, the Hay crop was secured in very good condition, and the quality as a rule is excellent. The yield per acre of seeds hay is estimated at 29.8 cwt. or $1\frac{1}{2}$ cwt. above average, but two cwt. lighter than the heavy crop of last year. Most eastern and south-eastern counties had very good crops, and in the south-west yields were generally well above average, but in the north and in Wales many counties had lighter crops than usual. The estimated total production of 2,562,000 tons is 225,000 tons less than last year. Yields of meadow hay were relatively not so good as those of seeds hay, the estimated average yield per acre of 21.1 cwt. being only one-fourth of a cwt. above average. As compared with 1924, the yield per acre is lighter by about two cwt. per acre, and the total hay production, viz., 4,547,000 tons, is smaller by 665,000 tons. As in the case of seeds hay the best results were in the east, and crops were lighter than usual in the north and in Wales. Taking both kinds of hay together, the production is estimated at 7,109,000 tons against 7,999,000 tons in 1924 and 7,707,000 tons in 1923.

Varieties of Fruits at Wisley.—The collections of fruits at Wisley are said to include 323 varieties, or supposed varieties of Apples; 114 of Pears; 116 of Plums and Damsons; 161 of Gooseberries; 32 of Red Currants; 4 of White Currants; 26 of Black Currants; 128 of Raspberries; 14 of other berries; 95 of Strawberries; and 6 of Quince. This standard collection is very valuable for the comparison of growth, etc., of the varieties selected for the trials of commercial varieties of fruits. Up to the beginning of the present year the number of different kinds of fruits in the commercial trials were 47 Apples; 8 Pears; 9 Plums; 6 Cherries; 2 Damsons; 16 Raspberries; 11 Red Currants; 17 Black Currants; 6 Gooseberries; 3 Strawberries and 1 Nut.

Grants to Agricultural and Horticultural Colleges.—The Treasury has authorised the continuance to agricultural and horticultural colleges for another two years (ending with the academic year 1925-26) of the rates of grants sanctioned for the five year period 1919-1924. The following is a list of the grant-aided institutions, and the amounts of the annual block grant payable to each. (a) Universities and university colleges: University College of Wales, Aberystwyth, £3,800; University College of North Wales, Bangor, £3,800; Cambridge University School of Agriculture, £5,700; Leeds University, £3,800; Armstrong College, Newcastle-on-Tyne (University of Durham), £3,300; Oxford University School of Rural Economy, £3,300; University College, Reading, £3,500; University College, Reading, British Dairy Institute, £900; South-Eastern Agricultural College, Wye (University of London), £4,400. (b) Agricultural Colleges, etc.: Harper Adams Agricultural College, Newport, Salop, £4,400; Midland Agricultural and Dairy College, Sutton Bonington and Kingston, Derby, £2,500; Royal Agricultural College, Cirencester, £2,000; Royal Veterinary College, London, £3,300; Seale-Hayne Agricultural College, Newton Abbot, Devon, £2,300; and Swanley Horticultural College for Women, Swanley, Kent, £1,500. The total amount of the grants is £48,500.

A Potato Conference.—A conference on recent developments in the manuring of Potatoes will be held in the Rothamsted Experimental Station on Friday, November 20, at 11.30 a.m. The speakers will include Sir John Russell, Mr. J. C. Wallace, Mr. R. W. Wheldon, and Mr. T. Eden. Those intending to be present are requested to communicate with the secretary, Rothamsted Experimental Station, Harpenden.

Mr. James MacDonald.—Most horticulturists who visit the leading flower shows throughout the country are well acquainted with the cheery personality of "the Grass Man," Mr. James MacDonald, of Harpenden; but comparatively few are aware that he was successful in other branches of gardening before he founded his present business "on a blade of Grass." A native of Perthshire, he obtained a thorough grounding in various branches of gardening before he came south to enter the nurseries of Messrs. Dicksons of Chester, and later, the nurseries of Messrs. James Veitch and Sons. At this period some fine collections of Conifers and other trees and shrubs were being made in various parts of the country, and to gain a knowledge of these subjects, Mr. MacDonald went to Tortworth Court Gardens, Gloucestershire, where he remained several years. He believes that *Choisya ternata* was first planted out-of-doors at Tortworth, and remembers that a specimen which failed to bloom in a big conservatory was planted out-of-doors, where it flowered freely. During his gardening career,



MR. JAMES MACDONALD.

Mr. MacDonald won two medals from the National Rose Society, and awards from the National Chrysanthemum Society, and Shrewsbury Floral Fête. Many years have elapsed since he decided to devote his attention solely to "Grass," but from his childhood Grasses possessed a fascination for him, and with his father and brother he made a collection of indigenous species, especially those found in Perthshire. That Mr. MacDonald has, with his two sons, built up a successful business in the creation, improvement and preservation of lawns of many kinds, is obvious. His "Grass Gardens" have proved delightful and interesting features of many leading exhibitions. At the International Horticultural Exhibition of 1912, he was awarded a gold medal and special cup for his display, and in the following year his exhibit of Grasses at Ghent won a gold medal *avec felicitations*. At the Chelsea show of the present year, Their Majesties King George V and Queen Mary made a close inspection of Mr. MacDonald's exhibit, and stood for some time on the central section; eventually, the section so honoured was removed in its entirety to Harpenden where it is a prominent feature, and one which money will not purchase. Mr. MacDonald has frequently contributed to our pages and to other publications, and he has written a very useful book, entitled *Lawns, Links and Sports Fields*. The Chief burden of the Harpenden business now falls upon his two sons, Mr. H. C. F. MacDonald, and Mr. I. J. C. MacDonald, who are very proud of their father.

Spread of Silver Leaf Disease.—Silver Leaf disease has caused severe loss to commercial growers in Leicestershire, where over 2,000 Plum trees have been destroyed on commercial plantations covering 230 acres, within a period of five years. In the Melbourne district of Derbyshire the cultivation of the Victoria Plum has been almost entirely abandoned in favour of other fruits and vegetables, whilst in Middlesex, which has probably suffered greater loss than any other county, it is estimated that of the total number of Victoria Plum trees planted during the past ten to twenty years over fifty per cent. are dead or dying through Silver Leaf.

Vegetables as Food.—A *Bulletin* issued by the Ontario Department of Agriculture* gives some interesting data on the food value of vegetables, and the preparation of vegetables for the table. The author states that vegetables serve to keep the blood alkaline and although a certain number of fruits and vegetables contain a great deal of acid in themselves, after digestion they give to the blood mineral matter which makes it alkaline. The most useful vegetables in this respect are Spinach, Celery, Chard, Lettuce, Tomatos, fresh Cucumbers, Carrots, Cabbage, Cauliflowers, string Beans, Beets, etc. Another value of vegetables is that they are a source of iron which is necessary for good red blood formation. Those especially rich in iron are Spinach, Dandelion, Chard, Watercress, Cabbage, Brussels Sprouts, Asparagus, and string Beans. It is, however, in the supplying of vitamins that green vegetables and fresh fruits are so valuable in maintaining health in the body. Green leaf vegetables are especially valuable for their vitamins, such as Lettuce, Celery, and raw Cabbage, whilst Tomatos also are amongst the most important of vegetables which furnish vitamins. As a source of starch, sugar and fat vegetable foods are very valuable, those that are rich in starch and sugar including roots and tubers such as Potatos, Parsnips, Carrots, Beets and Salsafy, also those of which the seed is used, such as Maize, Beans and Peas. Certain vegetables contain so much as ten to fifteen per cent. of starch and sugar, and of these the chief are Beans, Beets, Potatos, Corn, Parsnips, Lima Beans green, dried Lima Beans, dried white Beans, and dried Peas. Those with a low sugar and starch content are Lettuce, Cucumbers, Spinach, Chard, Asparagus, Endive, etc. The list of vegetables recipes show some methods adopted in Canada with which we in this country are not familiar. The use of Nuts with salads is recommended, the Nuts containing a certain amount of protein. Such salad in conjunction with bread and butter and a glass of milk, is said to make a well-balanced meal.

Autumn Colour in the Arnold Arboretum.—We learn from the *Bulletin* issued by the Arnold Arboretum University that although the leaves of several trees which assume brilliant autumn colours have been injured by severe winds, rain, and even by an unseasonable snowstorm, and have fallen prematurely this autumn, like those of the Red Maple (*Acer rubrum*), the Sugar Maple (*Acer saccharum*), the Kentucky Coffee tree (*Gymnocladus*), many of the Cherry and Plum trees, the Sassafras, most of the Poplars, *Phellodendron amurense*, *Cercidiphyllum japonicum*, the Walnuts and some of the Hickories, there is now (October 29) probably more brilliant colour in the Arboretum than there has been earlier or than there will be later, for the leaves on many of the Oaks, of which the forests and many plantations in eastern Massachusetts are largely composed, the American Beech trees, the Tulip Tree (*Liriodendron*), a few Maples, the Hornbeams (*Carpinus*), Hop Hornbeam (*Ostrya*), and of the Sorrel tree (*Oxydendrum*), are still brilliant in colour. The autumn leaves of the Scarlet Oak (*Quercus coccinea*), the White Oak (*Quercus alba*), of a dwarf Oak (*Quercus ilicifolia*), and of the Red Oak (*Quercus borealis maxima*) make the greatest show in the Arboretum. Those of the Scarlet Oak are the deepest red or scarlet of any of the American

* *Bulletin* 312, Ontario Department of Agriculture, Women's Institutes Branch.

Oak trees. This tree is not a native of the Arboretum and is not common in the neighbourhood of Boston, but a little further south and generally in the Cape region it is a common tree. There are not, unfortunately, many specimens in the Arboretum, and the best of them are among the trees on the lower side of the road near the top of Peter's Hill. The Scarlet Oak deserves to be better known to the planters of trees and to be more generally used by them. Nurserymen too often sell the Pin Oak (*Quercus palustris*), an inferior tree in the color of its autumn foliage, when the Scarlet Oak is ordered. The leaves of the White Oak turn late to various shades of red, and are brilliant in favourable seasons during at least two or three weeks. The great beauty at this season of the year of *Quercus ilicifolia*, which is usually a tall shrub rather than a tree, is that with its bright lustrous leaves it often thickly covers sandy barrens and rocky hillsides near the coast from southern Maine southward, and is especially abundant on Cape Cod and its islands in situations where few other trees can grow. It grows well in the Arboretum and can be seen to advantage on the left hand side of the Valley Road beyond the group of native swamp White Oaks (*Quercus bicolor*). The lustrous leaves of the Red Oak (*Quercus borealis maxima*) turn late to various shades of brown or red and retain their beauty for a long time. This large and fast-growing tree is the Oak which has been chiefly planted along the Boston and Brooklyn parkways and in the Boston parks, and has generally grown better in western and northern Europe than other American Oaks. On Peter's Hill, among the trees on the lower side of the road below the summit is an Oak tree which is not surpassed in the brilliant red colour of its autumn foliage. Nothing is known of the origin or history of this tree which for years has been considered a *Quercus bicolor* with abnormally coloured leaves. This year for the first time this tree has produced a few acorns, and these suggest that this handsome tree may be *Quercus Prinus* of Linnaeus, the so-called Basket or Cow Oak, a White Oak of the middle and middle western states. Nothing is known here of the autumn colouring of this tree, but if this guess as to the identity of the tree is correct it is curiously enough the only living representative in the Arboretum of one of the largest and handsomest of the Oak trees of eastern North America.

Royal Society of Arts.—At the meeting of the Royal Society of Arts, to be held on November 20, Professor Edward Percy Stebbing, M.A., F.L.S., Professor of Forestry, University of Edinburgh, will read a paper on "Recent Progress in Indian Forestry." The chair will be taken by Lt.-Col. Sir David Prain. At the meeting on December 9, a paper on "The Imperial College of Tropical Agriculture," by H. Martin Leake, M.A., Sc.D., F.L.S., Director of the College, will, in the absence of the author, be read by Dr. A. W. Hill, Director of the Royal Botanic Gardens, Kew. Amongst papers to be read after Christmas at meetings, the dates of which are to be announced, is one by Professor John McLean Thompson, D.Sc., Professor of Botany, University of Liverpool, on "Some general Problems of Fruit Preservation"; one by Sir Edward John Russell, O.B.E., Director, Rothamsted Experimental Station, on "Investigations in Agricultural Science at Rothamsted," and one on "Modern Views of Vitamines," by Professor J. C. Drummond, D.Sc.

Appointments for the Ensuing Week.—Monday, November 16: National Chrysanthemum Society's Floral and Executive Committees meet. Tuesday, November 17: Royal Horticultural Society's Committees meet; Birmingham Chrysanthemum Society's Show (three days); Iris Society's Dinner and meeting at the Grosvenor Hotel, London; Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Wednesday, November 18: Hull and East Riding Chrysanthemum Society's show (two days); Buxton Chrysanthemum Society's show; Ayr Chrysanthemum Society's show. Thursday, November 19: Linnean

Society's meeting. Friday, November 20: Dundee Chrysanthemum Society's show (two days); Manchester and North of England Orchid Society's meeting; Association of Economic Biologists meet. Saturday, November 21: Burnley Horticultural Society's show; British Mycological Society's London Meeting.

"Gardeners' Chronicle," Seventy-five Years Ago.—*Tulip Exhibition for 1851.*—The following address to the Tulip growers in the Kingdom has been published by E. S. Dodwell, Esq., of Derby:—"Gentlemen, I beg to address you and to invite you to a conference on the subject of the Great Tulip Exhibition for 1851, delegated by you at your late meeting in Manchester, to the Society I represent. In regular course, after receipt of your delegation at the hands of your late secretary, Mr. Dixon, I laid the same before the committee of the Horticultural Society here; and I am gratified to state

heartily and cheerfully, and your work is perfected. Think of the aggregate sum when every lover of flowers in the length and breadth of the kingdom has contributed his (or her, for we love the ladies and invoke their aid) 5/-, 2/6, 1/- to the fund; and, gentlemen, let me entreat your special attention to the last-named sum; think of what is due to humble devotees, think of the pleasure received and conferred. In days gone past it has been a theme and a glory to remark, 'I took a part in that great battle; I stood to the guns on that bloody day.' Such themes, we hope, are past; but shall not florists, and poor florists have their theme? Shall they not be permitted to boast, 'I lent my aid to that great work; I helped to achieve that great success?' Surely they may, and surely you, gentlemen of the respective committees, will give them an opportunity so to participate. Remember the work that engages you; remember the result to be produced

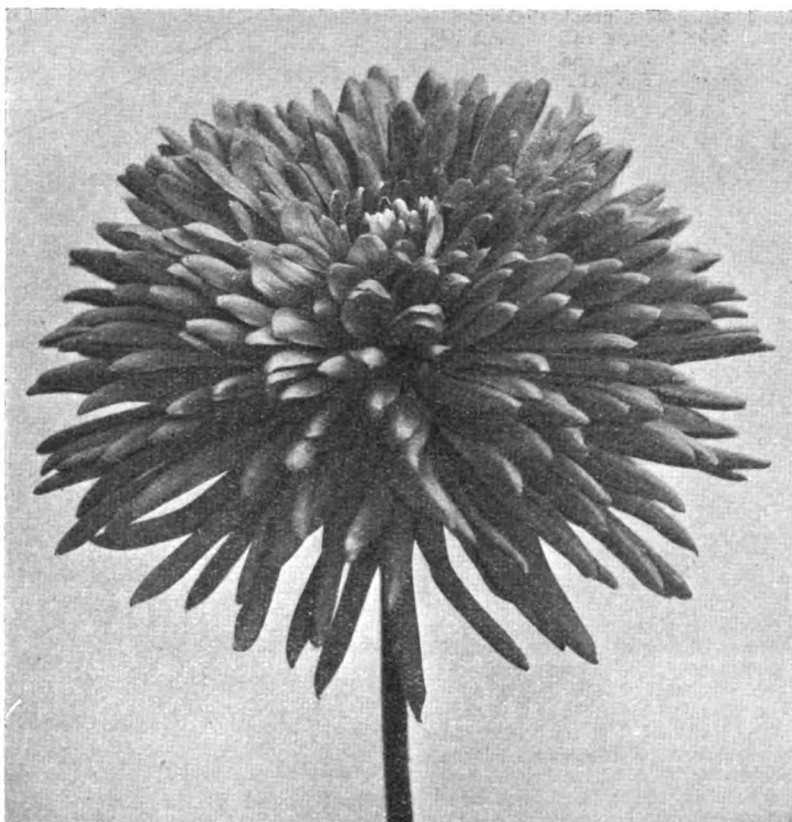


FIG. 159.—CHRYSANTHEMUM MRS. R. F. FELTON.

British Florists' Federation's First Class Certificate, November 2; R.H.S. Award of Merit, November 3; National Chrysanthemum Society's First Class Certificate, November 5.
(see p. 397).

that it was received with warm cordiality, and a motion pledging the committee to give it all possible support, and a gratuitous accommodation in the large hall in which the exhibitions of the Society are held, with a donation of £5 to the fund, was unanimously adopted. J. Edwards, Esq., has directed me to place his name on the subscription list for £10; T. Adams, Esq., £5; Mr. C. Turner, of the Royal Nursery, Slough, £5; and my own donation, £5, completes £30. I mention this merely to claim your attention to what follows. I propose, therefore, as a simple means to this end, the formation of a committee in every city and town, village and floral district, throughout the kingdom. Such committee to communicate with the central committee, to canvass for subscribers, to report the probable number of exhibitors, and generally to suggest such arrangements as may seem most conducive to the success of the exhibition, and let but such committees accept their mission

—the large sum—the aggregation of small sums—the flowers to be brought forward, certain to be the best, and indicating the progress of the Tulip; remember the great meeting, the commingling of ideas, the action of mind upon mind, the radiation of knowledge, the interest and regard created by reciprocal kind offices, the removal of vague ideas, and their concomitant distrust; and above all, and beyond all, the sympathetic action acknowledged by the whole community, in the fact each individual enunciates, 'I took part in that great work!' Gentlemen, addressing enthusiasts and devotees, men susceptible of the delights of floriculture and endued with thought, and energy, and purpose, I cannot doubt your response; and I entreat of you, therefore (my personal ignorance compelling this request), that you will, with the least possible delay, communicate to me your proceedings." *Gard. Chron.*, November 16, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Preparing for Winter.—November is generally considered the period at which the winter treatment of Orchids should commence, and is probably the most trying month of the whole year for the inmates of the various divisions. It is often very difficult to maintain the conditions necessary for the future welfare of the plants. Henceforward all Orchids will need all the sun-heat and light available, and, so long as the sun is capable of raising the degree of warmth in the houses considerably during the middle hours of the day, every advantage should be taken of admitting fresh air. The great difficulty is to balance the four agents ruling plant life, viz., light, heat, moisture, and air. It is advisable in preparing for winter that the temperatures in all the houses should be reduced a few degrees by night. Great care should be exercised to prevent plants that are at rest starting into growth prematurely, and those still growing actively should be encouraged to maintain sound, healthy, pseudobulbs.

Temperatures.—During the winter the temperatures of the houses on light, bright days should be a few degrees higher than on dull, heavy days, and the highest temperature of each house should be between the hours of twelve and two, while the lowest should be during the hours of darkness; the difference between the two extremes should be from 5° to 10°. The following temperatures should be maintained as nearly as possible:—East Indian house, 60° to 70°; Cattleya house, 58° to 65°; cool house, 48° to 55°. It will be beneficial to the inmates of either division if the temperature is allowed to fall a degree or two for a short period during times of severe frosts, rather than to employ excessive fire-heat. Very little damping of the houses is now required; water should only be used in sufficient quantity to maintain a humid atmosphere in those houses where the plants are still growing, and to counteract the dryness caused by fire-heat where it is necessary to maintain a warm temperature. Cleanliness is an important detail in the successful cultivation of Orchids, and no time should be lost in cleansing the houses both inside and out; cleanliness of the plants and their general surroundings is always essential.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pymford Court, Woking, Surrey.

Herbaceous Borders.—How often should the herbaceous border be overhauled may be a vexed question which admits of no concrete answer. As often as necessary is the abstract answer and a wise one, for there are many factors which tend to vary the duration of time that a plant will remain vigorous without being disturbed. The greatest factor, however, is the constitution of the plant itself, and while some plants grow so vigorously that they become matted clumps in a single season, others take more than a season to become established, resent disturbance, and simply ask to be left alone when flourishing. It is therefore obvious that a fixed rule for overhauling the border every second, third, or fourth year cannot be laid down; rather is it wise to admit that to keep a large and varied collection of herbaceous perennials always in prime condition it is necessary to practise a partial overhauling every year and this must be done with a good deal of judgment and an intimate knowledge of the habit and vigour of the various subjects

grown. Where extensive alterations are being carried out in existing borders a wholesale removal of the plants is frequently the easiest way of doing the work and in this case a length of the border should be cleared, thoroughly prepared, enriched and consolidated for the reception of the re-arranged plants. The arrangement of the various subjects according to height should not be carried out too rigidly. By bringing fairly tall plants towards the front in some cases and faking moderately dwarf ones well back in others a much more effective *ensemble* is created. For general purposes it is difficult to surpass the old style mixed border where a large collection of perennial plants is arranged in small clumps irrespective of colour. Such borders provide effective floral displays over a long period, and, by judicious planting, growths from later flowering subjects may be trained out to furnish spaces which may have become bare through the passing out of flower of early season subjects.

Colour Scheme.—A colour scheme should only be attempted where ample space is available, as schemes of this kind can only be effective at a distance and boldness of design is an essential factor in the foundation of this distant effect. Much more thought and skill are needed to make a success of the colour scheme border, but when it is a success the mixed border cannot be compared with it for effectiveness and beauty. A well-planned, mixed border, however, is infinitely more effective than an indifferently planned colour scheme border.

Lawns.—The present season has contributed some remarkable records to gardening, and I should think none is more remarkable than the weight of grass taken from lawns after the passing of the autumn equinox. Mowings have been as luscious as during the spring months and the moisture and mildness of the season make it necessary to keep the mowers going beyond the usual last date. The man on the spot must be the judge as to the time for the last mowing; in these gardens it will probably be about mid-November. The point to remember is that it is not wise to set the mower too low for late mowings, but it is equally necessary to ensure that the grass is left in a comparatively short state so that winter cultivations are not hampered.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to LT.-COL. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Hard-wooded Plants.—The overhauling and examination of pot-grown *Azalea indica*, greenhouse *Rhododendrons*, and other hard-wooded plants should now be undertaken, and any of the plants which are needing it may be re-potted. Essential points to observe in carrying out these operations are—the provision of sound, clean pots, carefully drained, and very firm potting. Do not overpot the plants, and care should be taken against them being potted too deeply. When completed the old ball should be just covered and the pots not over-filled, allowing adequate space for watering.

Camellias.—Opportunity should be taken to cleanse these plants thoroughly before the flowers begin to open. Take care that the plants do not become too dry at their roots or excessive bud-dropping may result. Plants which have set flower buds very thickly should be disbudded as the buds become large enough.

Climbing Roses.—Any of these plants which are being grown in borders or beds under glass may, with advantage, receive cultural-attention at their roots at the present time. A goodly portion of the old soil should be taken, not only from the surface of the borders, but also, if the old soil is becoming exhausted, from the outer parts of the borders, and to a greater depth. This may be substituted by fresh soil, comprising strong, turfy loam, a

little well-decayed manure, and some good bone-meal. Give the whole of the borders a liberal watering after renewing them. The final pruning of the plants should be left until just previous to re-starting them into growth.

Cyclamens.—The young plants which were raised from seeds sown in August should by this time be large enough to be pricked off into pans. These latter should be well-drained and filled with a mixture of one part fibrous, mellow loam, and one part Oak leaf-mould, with the addition of broken old mortar rubble and sharp sand. Pass the whole of the material through a half-inch meshed riddle, rubbing as much of the fibre as possible through the sieve. Place the seedlings about one-and-a-half inch apart in the pans. Grow them on in a temperature of 55° to 60° close to the roof-glass. Last year's plants should now be throwing up their flower spikes freely, and may be allowed or disallowed to flower as may be desired. From the less vigorous or backward plants it will be well to remove the flower spikes so soon as they become large enough to be safely detached by means of a sharp pull, for some time longer if they should not be in demand, and indeed any portion of the stock of plants may be thus treated should it be desired to defer their flowering. Those plants which are allowed to flower freely should be fed moderately with liquid manure and an occasional application of some good artificial plant food. Take care when applying water to the plants that it does not become lodged in the centres of the corms, and keep the flowers pulled from the plants before they become stale.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Pruning.—By this date the foliage will have fallen, more or less, from Pear trees, and when the weather is favourable the pruning of the trees should be commenced. Wall Pear trees that have filled their allotted space should have the growths cut back to within two or three buds at the base. All dead spurs and badly-placed shoots should be cut away, and if spurs are too numerous they should be thinned to allow light and air to reach the branches. All old ties of string or shreds should be taken away and new ones substituted. Young trees that have more wall space to cover may have their leading growths shortened to about fifteen inches or eighteen inches according to the variety and the stocks they are worked on; if on the Pear stock they will need a considerable amount of pruning. The shortening of the side growths may be done as advised for the older trees.

Bush Pear Trees.—These should be pruned to form spurs in the same way as the others, but they should not be crowded with leading growths; keep the middle of the tree open.

Apples.—Certain varieties of Apples may be pruned closer than others. Those that form plenty of flower buds close to the stems, such as varieties of the Codlin type, Lord Derby, Royal Jubilee, Edward VII, Cox's Orange Pippin, King of the Pippins and Egremont Russet, may be pruned closely. Other varieties, such as Worcester Pearmain, Blenheim Pippin, Bramley's Seedling, Golden Noble, and Newton Wonder should only be thinned sufficiently to prevent over-crowding of the shoots. While the pruning is in progress watch carefully for any buds that are affected with brown rot; these should be cut out and burnt. Scrape all cankered places and dress the wounds with a mixture of gas-tar and clay in equal proportions. Well work the specific in the crevices of the shoots with a stiff paint brush. Where the trees are crowded with old spurs these should be thinned to give room to younger wood to form fruiting spurs. Care and judgment should be exercised when

pruning the leading shoots, leaving the top bud in the right direction to keep the tree evenly balanced. In some cases it will be necessary to prune to a side bud, in others to an inside bud, to prevent the trees from covering too much ground. On upright growths prune to an outside bud, and the same remark applies to pruning the side growths.

Standard Trees.—The best time to prune standard trees is so soon as the crop is harvested and before the leaves drop. The operator is then able to see exactly what growths are required to be removed. All overlapping branches and those that cross each other should be cut away and the wounds made in pruning dressed with gas tar. This material should also be used on other parts of the trees where the bark is bruised.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Asparagus.—Where Asparagus is desired for use in the beginning of the New Year, suitable roots should be procured. Choose good, strong clumps in number according to the quantity of stock required, and place them in pits or greenhouses. Houses that have been recently cleared of Melons and Cucumbers will be suitable for the purpose. Plant the roots firmly and fairly closely together in old potting compost from the soil heap, and cover the roots to a depth of three-inches or four-inches. Maintain an even temperature of about 63°, and soak the roots with tepid water as required.

Celery.—In some districts batches of late Celery need earthing up for the final occasion, and opportunity should be taken to complete the operation during the first favourable weather. Bank in the sides of the ridges very firmly by beating with the back of the spade; this will help to throw off some of the heavy rains. Early Celery that has been blanched by means of paper bands should be used first, for it will be liable to injury from sharp frosts. I have never seen Celery so badly infested with maggot at such a late period of the year as this season, many crops being practically cleared of foliage. The attack came with such rapidity some short time ago that little opportunity was afforded the grower to combat it, and much loss will accrue to many who have grown large crops of Celery for market.

Leeks.—Leeks that were dibbled in holes on the flat should be hoed and cleared of weeds when the weather is favourable and the ground in a fit condition. Any late-growing crops in trenches should receive their final earthing up, making the soil in the ridges very firm with the back of a spade.

Spinach.—Spinach raised from seeds sown in the autumn should be looked over periodically with a view to removing all decaying leaves, or the whole crop will soon get into a bad state. The same remark applies to the crops of Spinach Beet. Both these crops are benefited by fairly close picking, thus keeping down rampant growth, which often occurs. Hoe the beds when weather permits to aerate the ground. It is advisable to have a good bed of Spinach Beet as well as the ordinary Spinach, as it may be used as a substitute for Spinach, and, being very hardy, may be had for use practically any time throughout the winter.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM.
Wormley Bury, Broxbourne, Herts.

Early Vines.—Where ripe Grapes are required for use next May, the present is a suitable time for starting the vines into growth. Where pot vines are grown for supplying the earliest bunches these, if the pots are well filled with roots, should be transferred to

clean, sound pots two sizes larger than the old ones. If a top-dressing only is needed, this should be afforded. Use a compost consisting of the finest quality fibrous loam which has been stacked for several months, clean mortar rubble, and a five-inch potful of bone meal and a fifteen-inch potful of soot per barrow load of the mixture. Make the top-dressing thoroughly firm, and leave plenty of room in the pot for watering. The woodwork and glass of the house should be washed thoroughly, using hot water and soft-soap to which has been added a small quantity of paraffin, well stirring the mixture before syringing the woodwork and glass. Limewash the walls and all brick or cement spaces, adding a handful of flowers of sulphur to the wash. A hot-bed should be made of three parts fresh leaves and one part short stable litter, into which to plunge the pots when the heat of fermentation has declined to eighty per cent. When the pots are plunged tie the canes into half hoops to cause the buds to break evenly. The vines should be thoroughly clean before introducing them to their fruiting quarters. Keep the

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE,
Lowther Castle, Penrith, Westmoreland.

Transplanting Trees and Shrubs.—From this time onwards whenever the soil and weather are favourable, the transplanting of trees and shrubs may be proceeded with, in order to have them in their new quarters before spring. Trees and shrubs planted now will settle in the soil better and produce a freer first year's growth as compared with those planted in the spring, the latter usually suffering from drying winds in March. The soil does not become sufficiently consolidated about the roots of trees and shrubs planted in spring however well it may have been packed around the ball, before hot, dry weather sets in. Success in moving the tree or shrub, whether it be large or small, depends on the care exercised in lifting it. A good firm ball of earth should be attached to each specimen, and this may be obtained by first opening a deep trench with a spade and carefully loosening any superfluous soil from the roots until there remains a ball sufficient in size as compared



FIG. 160.—NERINE BOWDENII AT GLASNEVIN BOTANIC GARDEN.
(see p. 389).

temperature of the house at 45° at night and 50° by day. Spray the rods gently with tepid water twice a day in bright weather and keep the floors moist always.

Early Vines in Borders.—Permanent vines should be cleansed thoroughly and the houses washed as advised above, and all ironwork and trellis wires rubbed with a paraffin rag. If mealy bug has been present extra care will be necessary to rid the vines of this pest. So soon as the vines are pruned, wash them with hot, soft-soapy water, then remove any loose bark, taking care not to injure the under bark by peeling the old off too closely. Spread mats on the floor to catch the rubbish; this is most important. Repeat the operation after two or three days, adding a nicotine emulsion or Gishurst Compound. Keep the house open until the roots are dry, then cyanide the vinery, using two-ounces of cyanide per thousand-cubic-feet; exercise very great precaution in using this deadly gas. Remove a few inches of the loose surface soil of the border and substitute a similar compost as recommended above. Tie the rods into position, but if they are young and difficulty has been experienced in getting the buds to break evenly, bind them into half hoops similar to the pot vines. Water tanks in the houses should be cleaned out. So soon as the house is closed maintain a moist atmosphere, and use fire-heat only when the thermometer falls below 45° at night, and on no account allow the pipes to become hot.

to the dimensions of the tree or shrub about to be moved. Next, well undermine the ball with the fork. For large specimens a tree-lifting machine may be necessary, but for those of ordinary size a few planks worked in crosswise and bound together are sufficient. Mats or old sacks should be tied around the ball to prevent it from breaking and tearing the roots. The hole for the reception of the tree should be sufficiently wide to allow of all the roots being spread their full length and leave a margin of space after this has been done. Trim all roots that may have been torn when lifting, and press the earth firmly as each layer is added to the hole. The tree or shrub should be staked securely after it is planted. Guard against deep planting.

Sweet Peas.—Sweet Peas may be sown in pots now, and if the seedlings are grown in cool conditions they will form good plants for putting out of doors early next season. Use a compost consisting of two-thirds loam and one-third leaf-mould, adding plenty of sand to render it porous. Use three-inch pots for sowing and place three or four seeds in each pot. Well water the soil and cover the pot until the seeds have germinated. Keep a close watch for mice. When the young plants start to grow freely in February they may be transferred to five-inch pots and grown in cold frames to be hardened off and planted out on the earliest date considered safe in the particular district.

ROSE GARDEN.

PROPAGATING ROSES FROM CUTTINGS.

THOSE who intend inserting cuttings of Roses should do so forthwith. There is one advantage in working up a stock of Roses in this manner, especially in cold and exposed districts, for when Roses are budded on the Manetti or seedling Briar they frequently succumb if a spell of severe weather sets in, whereas with Roses grown on their own roots, should the tops die off through the frost, strong shoots will develop later.

Roses of the rambler family may be propagated from cuttings grown in the open. The cuttings should be from nine inches to fifteen inches long, and those of other kinds of Roses about six inches long. The cuttings should be made from ripe wood of this year's growth, and, if possible, with a heel of the old wood. If, however, no heel is taken with the cutting, it should be cut clean across just under a joint. The cuttings should be inserted in the ground in a slanting position facing north, and, in the case of ramblers, with two or three buds buried under ground. As the rows are made ready for planting a little sand should be put into them for a base of the cutting to rest on, and it all the leaves are left on they will more readily take root than if removed, as a callus forms quicker. So soon as a callus has formed the cuttings should be taken up and put into clean six-inch pots filled with maiden loam of a light, sandy nature. Five or six cuttings will be sufficient for each pot; and they should be inserted firmly around the sides of the pot.

Stand the pots containing the cuttings in a cold frame on a bed of ashes, and, provided the cuttings are kept moist, they will not require further attention for a month. The frames should be kept closed during that time to prevent moisture escaping. While the frames are kept closed no water will be necessary, but afterwards the cuttings should be kept moist and a little ventilation given. By about the end of February the shoot will have formed a considerable amount of callus, and at this stage the cuttings should be taken into a greenhouse or a low propagating pit (the latter suits them best) where a bottom heat of 70° is maintained.

If the callus has made good growth while in the cold frame the cuttings will root as easily as those of bedding plants after they have been in the heat for a short time, but not otherwise. *G. Barton, Sunnyside Gardens, Tansley, Matlock, Derbyshire.*

ALPINE GARDEN.

PRIMULA MINIMA.

MANY precious gems among the Primula tax to the utmost the skill of the cultivator and too frequently his most careful efforts do not bring success. This is true of the exquisite little *Primula minima*, a plant of miniature size. It abounds in its native places, the high moorlands of alpine regions of Europe, where, carpeted by other plants, it flourishes with the freedom we cannot expect to see in our gardens.

In our climate many carpeting plants grow so vigorously that they would choke this tiny gem. *Gentiana verna* and a few other subjects of similar nature will answer as carpeters for *P. minima*. Peaty loam, mixed with sand, and a cool position, should suit *P. minima*, although many would find it more satisfactory as a pot plant, grown in the soil mentioned above, and plunged in sand in a cool situation.

This tiny Primula has stiff, glossy leaves and develops from one to two flowers, generally of a lovely rose pink, with a white throat, on short scapes which rise barely above the leaves. There are several varieties, including a white one. It may be propagated by division or seeds, if the latter are obtainable.

CORYDALIS CHEILANTHIFOLIA.

UNFORTUNATELY, some of the newer Chinese species of *Corydalis* are not hardy in our climate, and, attractive as they are, they are of little use in the hardy flower garden.

C. cheilanthifolia is hardy in, at least, most British gardens. I grew it for some years in an exposed rock garden, having secured it soon after its introduction from China. It appeared to withstand the most severe winters and springs during the years it was in this rock garden, but it was left behind with many other good plants when I removed to a new garden.

The foliage of this *Corydalis* is very attractive, suggestive of bronze lace-work. The flowers, of the usual shape of those of a *Corydalis*, are small and developed in racemes, and with their pale yellow colouring look well just above the bronzy leafage of the whole plant. The plant grows only some six inches high, and is very attractive; it should not oust the old *C. lutea*, a well-known and brighter plant, but there is room for both species. *S. Arnott.*

BULB GARDEN.

LESSER-GROWN BULBOUS PLANTS.

(Continued from p. 366.)

AGAPANTHUS UMBELLATUS.

If more growers had the courage to treat the handsome African Lily as a hardy plant its real beauty would be more appreciated. Valuable as it is for growing in tubs, vases or pots for summer decorations in porches and verandahs or on terraces, planted out by streams or ponds it has a finer and more attractive appearance than as a pot or tub plant. It is sufficiently hardy to withstand ordinary English winters, at any rate in the South and West, with no more protection than its own leaves will afford. In extraordinary winters a little dry litter to prevent the frost from penetrating the tubers is all that is necessary.

The plant requires an abundance of moisture in the growing season but comparative dryness during the dormant season is essential, hence a position near a stream or pond where the roots can reach the water in the summer, but where the tubers are left well above the water level in winter, suits it admirably.

The plant is a voracious feeder and to produce opulent growth and inflorescences liberal feeding should be practised, for its tubular, bell-shaped flowers are most striking and effective when appearing over healthy, deep-green foliage in massive umbels.

ALSTROMERIA.

ALTHOUGH these beautiful Peruvian Lilies are easily grown in a well-drained, light soil, many growers have difficulty in establishing them. A common cause of failure is shallow planting; a mere covering of the roots spells certain disaster and they should be put down to a depth of at least six or eight inches. The members of the genus are impatient of root disturbance and once established they should be allowed to remain for several years, as they seldom attain their full beauty until the second or third year. Those who have failed to establish them by planting imported stock should try raising them from seeds and transferring them to their flowering positions while in active growth.

A. aurantiaca is one of the best and produces heads of rich orange flowers spotted with red. It is a very showy, highly desirable border plant and invaluable for cutting. *A. chilensis* hybrida bears flowers in beautiful shades of rose and bluish with orange-yellow and crimson markings, while *A. pulchella* (syn. *psittacina*), is a very attractive species with bright crimson flowers splashed green and brown.

AMARYLLIS BELLADONNA.

THOUGH not perfectly hardy, so many gardens offer positions where the requirements in connection with the cultivation of this

plant are fulfilled, that it does not need a very wide stretch of the imagination to include it in our collection of hardy bulbs. Its handsome, bold umbels of large, delicate, pale rose flowers, appearing in late autumn, make it a plant of outstanding value, and wherever a position can be found at the foot of a south wall or, better still, a narrow border adjoining a greenhouse, a few bulbs should be planted.

The border should be well-drained and thoroughly prepared for the reception of the bulbs, which should be covered to a depth of six or nine inches to guard against frost reaching them. The plants should not be disturbed for several years. When doing well an overhauling about every fourth or fifth year is advisable, and this should be done immediately after the flowering period.

There are two or three varieties of which *rosea maxima* is a very vigorous grower, throwing up umbels of from six to nine flowers; *speciosa purpurea* is a very richly coloured variety, the flowers being purplish-red with a striking white centre.

ANOMATHECA.

This genus of charming Cape bulbs is generally grown in pots indoors, but on light, warm soils with fairly deep planting it succeeds well outside and produces in July and August dazzling scarlet flowers with crimson blotches. It attains a height of about one foot and its small, brilliant flowers, standing gracefully above the grass-like leaves, make it very effective.

A. cruenta is the species chiefly grown and it is very useful as an edging or on rockwork. *A. grandiflora*, a recently introduced species, has rather larger flowers. They are readily increased from offsets or from seeds, which ripen freely.

ANTHERICUM.

THE so-called St. Bruno and St. Bernard Lilies are interesting, popular, hardy plants and they are valuable for associating with other graceful plants in the borders, while they are ideal for naturalising purposes in moist positions.

A. liliastrium bears elegant, snow-white, Lily-like flowers, while those of *A. liliago* are somewhat smaller and star-shaped. Both species flower during the summer and are valuable for cutting.

CAMASSIA.

THIS is an attractive genus of Liliaceous plants, most of which throw up stately spikes of flowers in various shades of blue in May and June, and though charming in the flower border at this season they afterwards become ragged, and it is more satisfactory to use them for naturalising purposes at the edges of the woodland.

C. cusickii forms a rosette of broad, glaucous foliage, and throws up elegant spikes of pale lavender, star-like flowers with yellow anthers. It prefers a rich soil and a partially shaded position, though it will grow almost anywhere. *A. esculenta* and its varieties bear rather larger flowers on tall, elegant spikes and are very attractive. *W. Auton.*

(To be concluded.)

HARDY FLOWER BORDER.

KNIPHOFIA (TRITOMA).

THE Kniphofias play a leading part in garden decoration; the tall, leafless and distinctive scapes of the larger-growing species give character and colour to the summer and autumn borders, while the smaller members are ideal plants for the rock garden or border of choice plants.

Commemorating Johann Kniphof, 1704-63, professor of Medicine at Erfurt, these Lilaceous plants are indigenous to South Africa and Madagascar, and with very few exceptions are hardy in these islands; however, in very severe winters, it is well to afford some protection to all but the most robust species. Bold groupings in somewhat isolated positions are

eminently satisfactory, especially when the large species are used; a background such as is provided by Yew or other Conifers, appears to intensify the beauty of these fine plants.

In a stiff, loamy soil, a sunny situation, and with abundant moisture, the majority of *Kniphofias* grow to perfection; propagation is effected by division or by seeds, the latter method being somewhat slow.

The best garden species include *K. aloides*, with coral-red flowers fading to orange. This plant attains to a height of four feet; introduced from South Africa so long ago as 1707, it is sometimes referred to as *K. Uvaria*. This is a handsome species, of which there are several varieties, the best being *K. a. glaucescens*, South Africa, 1859; *K. a. maxima*, Orange Free State, 1862, figured in *Bot. Mag.*, t. 6553, and *K. a. serotina*, a late flowering variety introduced from South Africa in 1859.

K. Burchellii is a desirable plant about eighteen inches high, with flowers bright red and yellow tipped with green. A distinctive character is given to this species by the black markings of the scape. This species was introduced from South Africa in 1816. *K. carnosa* is a somewhat small plant, introduced from Abyssinia in 1879; the rather small, apricot-yellow flowers are produced in the autumn on a scape about one foot high. This is a fine garden plant.

K. caulescens is a noble species reaching a height of five feet or even more; the flowers are red, fading to greenish-yellow, and are arranged in a dense head about seven inches or eight inches in length. This autumn-flowering *Kniphofia* has leaves of glaucous blue-grey. It was introduced from South Africa in 1862, and is figured in *Bot. Mag.*, t. 5946.

K. comosa has yellow flowers disposed in a dense head and produced in August. The plant grows eighteen inches to two feet in height. It is an Abyssinian species, and was introduced in 1879; it is figured in *Bot. Mag.*, t. 6559.

K. foliosa (syn. *K. Quartiniana*) has bright yellow flowers tinged with red, and it blooms in August. The leaves develop in a dense rosette; they are very broad at the base, tapering to a thin point. The species is a native of Abyssinia, and was introduced in 1880. It is figured in *Bot. Mag.*, t. 6742. *K. Macowanii* is a most beautiful species with bright coral-red flowers; of somewhat slender growth and flowering in August, it attains to a height of one foot or eighteen inches. It is a delightful plant for the rock garden. This South African species was introduced in 1874 and is figured in *Bot. Mag.*, t. 6167.

K. pumila is an orange-red species flowering in August, of small and slender growth. It came to this country from South Africa in 1774, and is figured in *Bot. Mag.*, t. 7641, under the name of *Tritoma pumila*.

K. praecox is a species flowering in May, producing bright red and yellow flowers with the habit of *K. aloides*. It is a native of South Africa, and was introduced in 1862.

K. Leichtlinii has dull red and yellow flowers produced in August. This fine species is a native of Abyssinia. *K. Rooperi* does not produce its orange-red flowers, fading to yellow, until October and November, and is therefore somewhat liable to suffer from the vagaries of the weather; it is a good plant in a mild autumn. This *Kniphofia* was introduced from Caffraria in 1854, and is illustrated in *Bot. Mag.*, t. 6116. *K. modesta*, a white-flowered species from Natal, is not easy to accommodate, but should be tried in a warm and sheltered position; it is a plant of the utmost interest.

Garden varieties of *Kniphofia* are legion, and where all are good, it is somewhat difficult to make a selection. It is impossible to omit the gracilis varieties, plants of slender growth and with small flowers; they bloom from July to late autumn, and are well-adapted to the rock garden. Some of the best of these forms are Alaska, yellow; Buttercup, yellow; Chrysolara, yellow and orange; Lemon Queen, Lady Hillingdon, yellow and orange, and Victoria, orange.

K. nobilis is one of the grandest of *Kniphofias*, with towering spikes, five to six feet in height,

bearing orange-scarlet flowers. This is one of the best species for producing a bold effect. Royal Standard, in yellow and red, is a noteworthy variety, blooming in July and August.

Fine yellow varieties are Solfaterre, late autumn; Sulphur Spire, August and September; Lachesis, August; and C. M. Prichard, August and September; Lord Roberts is a superb scarlet-flowered plant growing five feet or more in height and flowering in August and September.

Other good sorts are Triumph, bronzy-yellow; Corallina, Rufus, Rufa, John Benary and Goldelse.

When *Kniphofias* are doing well they should not be disturbed. An annual mulch of well-rotted manure is of great benefit to them, but disturbance at the roots, except when absolutely essential, is strongly to be deprecated. *Ralph E. Arnold.*

It is, however, a botanical puzzle, as in form and other points it does not agree with typical *C. Warscewiczii*, either the coloured or albino forms. It is most probable that it is a seedling sport from the white type in its native habitat. But the R.H.S. Committee, when considering its standing, failed to clear up the matter, and the exhibitor's name was accepted and must remain.

C. Warscewiczii Frau Melanie Beyrodt was first shown in a small group of coloured varieties by Mr. Otto Beyrodt, Marienfelde, Berlin, at the R.H.S. Holland House show, July 12, 1904, when it gained a First Class Certificate, and was fully recorded in *The Gardeners' Chronicle*, July 16, 1904, the fine size of the flowers, the purity of the white and the rich purple of the broad front of the lip being noted.

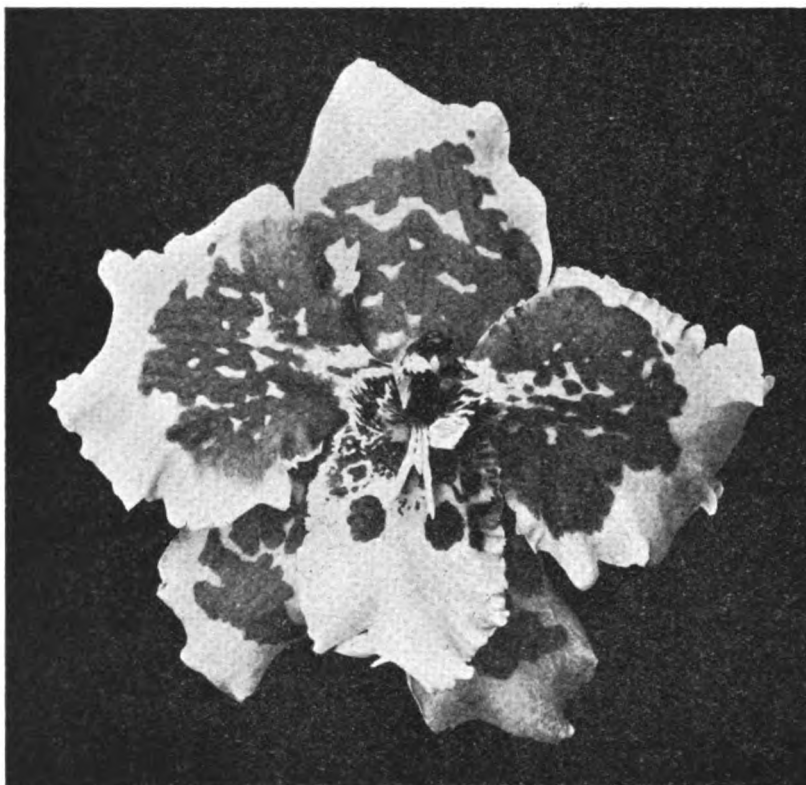


FIG. 161.—ODONTOGLOSSUM TYNTESFIELD.

ORCHID NOTES AND GLEANINGS.

ODONTOGLOSSUM TYNTESFIELD.

THIS handsome *Odontoglossum* was awarded the Premier Diploma of the Orchid Club when exhibited at Manchester on May 8 last, by Mr. B. J. Beckton, Daisy Bank, Irlams-ot-the-Heights. The illustration (Fig. 161) represents a typical flower, somewhat reduced in size, from a full spike of six blooms, and shows the fine form and texture of this fine Orchid. The parentage, unfortunately, is unknown.

The sepals and petals are marked by somewhat broken blotches of a pleasing lilac-rose colour on a white ground. The large, flat, white labellum has a pair of symmetrical rose-purple spots beneath the crest.

CATTLEYA WARSCEWICZII VAR. FRAU MELANIE BEYRODT.

THIS remarkable white-petalled *Cattleya* has flowered in many collections this season, and its unique characters never fail to attract. It is now an established favourite in gardens, and has been used by hybridisers in improving the strain of so-called albino *Cattleyas* with great success, the shape of the flowers and purity of the white in the progeny being assured where it has been used.

CATTLEYA LABIATA VAR. PEETERSII SUPERBA.

IN 1894 there appeared in the collection of M. A. A. Peeters, at Brussels, a most remarkable form of *Cattleya labiata*. This was probably a peloric sport, in which the rich colour of the lip was transferred to the sepals and petals, which, in the new variety, were intense rose-purple, the lip being formed and coloured as in typical *C. labiata*.

Two forms appear to have flowered, both with the same rich colour, but in the one reported in *Gard. Chron.*, October 27, 1906, p. 298 (as *C. labiata*, Peeters' variety, when it received a First-Class Certificate at the Royal Horticultural Society, some variegation on the sepals and petals was noted.

The variety *superba* has also a flaking of the colour, the tints varying in lighter and darker shades, the white being confined to the mid-ribs. In point of fact, it has in both forms little beyond its rich colour to recommend it, the flowers being small for the species, the habit rather dwarf, and the white-flaked form often showing brown stripes on the pseudo-bulbs. It is, however, unique in its section. A very richly-coloured flower taken from their plant, obtained at the dispersal of the Leemann collection, has been received from Messrs. Sanders, St. Albans. *J. O'B.*

TREES AND SHRUBS.

PROPAGATING PAULOWNIA IMPERIALIS FROM ROOT CUTTINGS.

THIS handsome foliage tree first bloomed in Great Britain in 1852, in the gardens at Bishopstowe, Torquay, and the species was described in *The Botanical Magazine*, tab. 4666. *The Gardeners' Chronicle* (June 29, 1912, p. 430), gave a description, with a photograph, of a specimen in the Cambridge Botanical Garden which was covered with fine spikes of bloom one foot in length. Kew has two specimens near the King William Temple, but as they are cut down to the trunk, one at about two feet and the other at about six feet from the ground, they are poor examples.

This Paulownia is noble in foliage as well as when covered with its Bignonia-like, pale-violet flowers, for the leaves measure one foot or more in length. It is frequently planted as a foliage plant in England and in gardens on the Continent. I saw a beautiful tree, three feet in diameter in Japan, but rather short-aged and with spreading branches. The leaves and the wood when crushed have an unpleasant odour.

Paulownia imperialis grows best in a rich loam, but if the soil is free from underground water it will thrive in almost any kind of soil. In Japan it does not luxuriate when exposed to the setting sun and it is also damaged by high winds. In my country it is cut down to the ground in the autumn and the stump covered with a mound of soil to protect it from frost and winds, but before the buds begin to break the mound is removed.

This tree is easily propagated from seeds and root cuttings. The Japanese prefer the latter and the price of the roots is given in the Japanese nurserymen's catalogue just the same as for seeds and plants. We obtain more vigorous plants from root-cutting than from seeds. In November the roots of specimens four inches to one foot in diameter are dug up and roots of half-an-inch to two-and-a-half inches in diameter are selected. They are cut into portions five inches or six inches long, dried in the sun for two or three days and then placed in a hole on the south side of a bank till the spring, or they may be stored in a dry hole under cover. They are placed in the hole and covered with a few inches of dry soil; several layers may be made if a large number is to be dealt with. In early spring they are planted in a bed and when the new shoots have grown to about four inches the strongest one is selected and the rest rubbed off.

The seeds are sown in April in a dry bed. They are not covered with soil, but merely pressed in the ground and covered with straw.

In Japan, Paulownia imperialis is chiefly cultivated for its wood—the beautiful silvery white and light timber is used for the best cabinet work, etc. The tree is cut to the ground every fifteen or twenty years but it is weakened after this has been done five or six times. *Kan Yashiroda, 40, Windsor Road, Richmond.*

DWARF FORMS OF PINUS SYLVESTRIS.

THE dwarf variety of the Scot's Pine known as *Pinus sylvestris* var. *aurea* is a most delightful subject for a commanding position in the rock garden or any other suitable eminence. It is of very slow growth, the specimen we have being not more than three feet in height, though its age must be fully fifteen years. In shape it is pyramidal; the lower branches have all been maintained and the foliage, apart from the tree's attractive form, is a very striking brassy-yellow throughout the winter. The change to that colour takes place about the end of October, and it does not revert to the sombre green of summer until April is well in. This is still a comparatively rare subject in gardens, but it richly deserves wider notice.

Another useful little Scot's Pine is *P. s.* var. *nana* (*globosa pumila*). We have had this variety for almost twelve years, and it is still only about one foot high and two feet across. In habit it appears to incline to the semi-procumbent,

the ends of the branches being tilted into the perpendicular. The foliage is a dark grey-green, more akin to that of the type, but, as in the case of the golden variety, the leaves are not much more than an inch in length. Both of these are growing in poor, stony, lime-free soil which becomes very dry in summer. *A. T. J.*

A NOTE ON SEDUMS.

AMONG the Mexican Sedums one of the most steadfast has been *S. retusum*. We have had this in various parts of the garden for a good many years, and, without any protection whatsoever, it has never suffered from frost. This is a sub-shrubby species with spatulate, glossy-green leaves notched at the extremity, and it is notable for being an almost continuous bloomer. In early summer its crimson-eyed, white stars are most plentiful, but it is rarely without some of these, save in the depth of winter. Though said to attain the



FIG. 162.—LILIUM GEORGE CREELMAN.

height of one-foot, *S. retusum* is a slow grower. We have had a number of plants for some seven or eight years, and they are still under six-inches, but the soil is poor and stony, and very dry in summer.

The beautiful, emerald leafage of *S. Palmeri* is never quite so attractive as it is in autumn, when it assumes so glaucous a hue that it is easily the most striking plant of that colour in the garden. We also find this species hardy enough to winter without protection, and that other Mexican species, *S. compressum*, is equally trustworthy. Whilst the former is more strictly a spring bloomer, the latter often prolongs its season throughout the summer, and one plant is even now (late October) carrying a large head of its golden-orange flowers.

S. Stahlia, though hardy enough here has not yet attempted to flower. For some time I had been wondering what became of its large, egg-shaped leaves, many of which vanish, leaving wide gaps in its string of beads, but I read in one of Mr. E. A. Bowles' interesting books that birds, mistaking them for fruits or berries, carry them away.

Among the Sedums having the brightest leaf tints at this season are the little mat-forming *S. lydium*, which is a rich crimson, and that excellent old plant, *S. spurium*, whose leaves are a vivid cerise, both plants being in poor soil with full exposure. *S. oreganum*,

even a form known as "splendens," said to excel in leaf-colour, does not become the brilliant blood-crimson that it does in some gardens, and *S. divergens* is even more disappointing in that respect. On the other hand, *S. spathulifolium* var. *purpureum* is always exceptionally good. This splendid variety not only gives us rosettes and leaves of unusual size, but the margins of the larger leaves are, in autumn and winter, a bright, cherry-crimson, which, melting into the purple of the younger foliage and the blue-white meal at the centre, makes a most effective combination. *J., N. Wales.*

AMERICAN NOTES.

THE reference to Rose Ladylove, on page 281, interested me because this name was undoubtedly first given to the original *Ophelia* in Covent Garden Market after its forcing qualities had been proved by the E. G. Hill Co., of Richmond, Ind. If I recall rightly, *Ophelia* had been in commerce two or three years before its value for forcing was proved and I believe Mr. Hill gained the impression that it was useful for this purpose after he had seen it being tried at Messrs. Beckwith's or elsewhere. At all events it was not until after *Ophelia*'s merits had been made known in America that "Ladylove" was used in Covent Garden and as the Messrs. Beckwith were the only people to offer it and their salesman sold it as Ladylove, I assumed the new name was "invented," to prevent others from using it too soon. Lady Pirrie was another variety that appeared in Covent Garden about the same time under a name I cannot now recall. Renaming of flowers in Covent Garden is, or used to be, common.

I am enclosing a small print of the new hybrid *Lilium* Geo. Creelman (Fig. 162), raised at the Ontario Agricultural College, Canada. This is a hybrid from *L. regale* and *L. Sargentii*. The amount of stock of this Lily is, of course, limited, and so far as I am aware, no bulbs have been distributed. It is perfectly hardy in Canada provided the bulb has a six-inch covering of sand; the stems carry up to seventeen flowers, these being so much as six inches long and four inches across the mouth, which is strongly reflexed. The blooms are snow-white, shading to rich yellow from the centre to the base of the throat. The anthers are purplish, changing to brown at maturity. The plants will grow six feet tall; well established bulbs produce so many as four rigid stems that are densely covered with dark green foliage. This hybrid appears to be a wonderful Lily for the garden and when it becomes available, it should become exceedingly popular. *T. A. Weston, New Jersey, U.S.A.*

PUBLIC PARKS AND GARDENS.

THE MINISTRY OF HEALTH has authorised the Acton and Ealing Councils to borrow sums of £45,342 and £51,070 respectively for the purchase of Gunnersbury Park.

APPLICATION has been made by Ramsgate Corporation for sanction to borrow £32,688 for laying out land on the St. Lawrence Cliff's Estate, West Cliff, for pleasure grounds.

THE planting of trees in Richmond Park, which was suspended during the war, has been very extensive in the past few years, and very considerable numbers of Oak, Ash, Maple and Beech trees have been planted for the replacement of those that have died and to increase the number and variety already included in the Park. In 1923 the number of new trees planted was 350. This general planting is being carried out in the other Royal parks, and future generations will have no cause to complain of neglect by the authorities responsible to-day.

NOTES FROM GLASNEVIN.

NOWADAYS when garden-raised forms of *Gladioli* are so popular it is refreshing to turn occasionally to the wild species and note their simpler charms. None of them has had a more potent influence on the characters of recent garden hybrids than *G. primulinus*. The so-called *primulinus* hybrids are among the most popular of garden flowers, and have the merit of continuing to throw up spikes for many weeks in succession. There is a group of *Gladiolus primulinus* in a narrow border in front of one of the houses here which has never been lifted, and it continues to increase and flower freely. The position is a dry one fully exposed to the sun, and is evidently suitable in spite of the fact that Mr. C. E. F. Allen has described its habitat as "one of the wettest parts near the Victoria Falls" (*Bot. Mag.* t. 8080). The colour of the flowers is somewhat paler than depicted in the figure quoted above, but the description—pale primrose—is correct. It is a plant that grows well in any garden and if planted in a suitable position need not be lifted annually.

In previous notes I have made references to *Nerine Bowdenii*, but at the risk of being credited with repetition I do so again. No matter what the season may be the flowers are freely produced, and no kind of weather seems to have any effect on the open flowers. For some time past we have had heavy storms of wind and rain, yet this *Nerine* seems unaffected. In addition to the type, which here forms a mass of bloom a yard across (Fig. 160), the paler *pallida*, the deeper coloured *Exonia*, and *Colossus* do equally well. It is possible that some of the hybrid *Nerines* usually grown under glass would do in sheltered borders in the open. Many seedlings have been raised at Glasnevin, and the indoor display at present is a feature. Annually some of them are discarded, and as an experiment a number were planted out round the houses. So far all have lived and a few are flowering, those having *Plantii* or *Fothergillii* blood being very rich in colour.

Kniphofia brevifolia (*Bot. Mag.* t. 7570) is one of the smaller-growing species suitable for a sheltered position. Lacking the fine colour and size of the many forms of *K. aloides*, it nevertheless has a peculiar grace and charm of its own. Said to be allied to the white-flowered *K. modesta*, it seems hardier than that species, which has never become established here. *K. brevifolia* has been known to botanists since 1862, but was not introduced to cultivation until 1895, when it was collected by Mr. J. Medley Woods and sent to the late Mr. Max Leichtlin. Planted in a sheltered border it does well, forming tufts of narrow leaves some two feet long, the flower scapes projecting well above them. The flower spike is some six inches long, the flowers closely set, perianth tube short, pale golden yellow; flowering in October.

Cyclamen cilicium is a dainty species and the latest of the autumn-flowering series, almost linking up with *C. Coum*, which is already showing flower. For a sheltered nook in the rock garden no more beautiful plant could be recommended, but it is seen to best advantage perhaps in the alpine house, where in pan or pot it flowers freely, and may be enjoyed no matter how inclement the weather. The leaves are small, orbicular, blunt, and somewhat cordate at the base. The flowers are smaller than those of *C. neapolitanum*, pale rose coloured, produced quite freely. There is a good figure in *The Gardeners' Chronicle* of February 5, 1898, p. 81, reproduced from a photograph taken by M. Siehe, of Mersina, showing the plant in its native habitat in the Cilician Taurus.

Leptodermis pilosa, which promises to be a useful autumn-flowering shrub, is a new species introduced by Mr. Forrest from the base of the Lichiang Range in China. Several other species have recently been collected but do not seem much in evidence as living plants. *L. pilosa*

is now from two-and-a-half feet to three feet high here, forming a much-branched shrub, with opposite, ovate leaves, dark green above, paler below with scattered soft hairs on the veins and margins. The flowers are produced at the apex of the shoots of the current year and on short lateral branchlets in clusters of three to five; tube of the corolla about three-eighths of an inch long, the lobes spreading, pale lilac or almost white. Cuttings root readily, and the

many years ago but are now probably rarely seen out of botanic gardens. *G. Devoniana* is at present flowering in the stove here and is remarkable for the large size of the flowers. The tube of the corolla is slender, some eight to nine inches in length, expanding suddenly to five broad, spreading, recurved lobes; the fully open flowers are very pale yellow, at first appearing almost white.

Ichroma grandiflora (*Bot. Mag.* t. 5301)



FIG. 163.—ACACIA SUAVEOLENS.

R.H.S. Award of Merit, November 3; flowers yellow. Shown by Mrs. C. Williams, Greenway, Churston.

(see p. 378.)

plant so far has grown freely in sun or shade. It has not yet been tested by a severe winter but has proved quite hardy after two years in the open.

Gardenia Devoniana (*Bot. Reg.*, vol. 32, t. 63) is an old member of a genus once much more extensively cultivated than is now the case. It is a native of tropical Africa, and according to the description accompanying the figure was introduced from Sierra Leone by Mr. Whitfield, whose name is commemorated in *Whitfieldia lateritia* (*Bot. Mag.* t. 4155). Both plants enjoyed considerable popularity

is a Solanaceous shrubby plant also known as *L. Warscewiczii*. It was discovered by Hartweg in the Mountains of Ecuador and was probably introduced about 1844, or a little earlier. The leaves are large, ovate, acuminate, rounded at the base and hairy on both surfaces. The flowers appear in late autumn and are produced in loose clusters; the corolla tube is long and deep violet in colour. Generous treatment is necessary to get the best results, and it is probable that planting out in a warm greenhouse would give a better show of flowers than pot culture. *J. W. Pesant*.

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THE GARDEN IN ANTIQUITY.**XV.—ARABIAN GARDEN-CRAFT.**

THE term Arab has become a synonym for wanderer, bird of passage, one with no settled home. We must not allow this fact, however, to mislead us. Even the Arabs are not without their fixed abodes in the desert, or their villages, towns and cities in the regions which are not desert. Some are still nomads while others till the soil. Anthropologists tell us that "the gathering of wild fruits, by which hunters and primitive nomads find some vegetable nourishment, forms the first impulse to pass over to an agricultural life."

The Arabs have long been cultivators of the soil, as well as horse-breeders, herdsmen, and owners of camels. The Prophet Mahomet seems to have favoured the nomad type of character as against the agricultural. It is said that he once told the following story to one of his companions in the presence of an Arab of the desert. Permission to sow some grain was sought from Allah on one occasion by an inhabitant of Paradise. "You already have everything you need," was Allah's reply. "True," was the answer, "all the same I should like to be allowed to scatter some seed." Permission having been granted the seed was sown, and instantly the sower saw it spring up, grow tall, and become ripe for harvest. "This man," said one who heard the story, "must have been either an Ansari or a Kureyshite, for they employ themselves with seed-sowing, a thing which we Arabs of the desert never do." Thereupon the prophet smiled approvingly. Implements of agriculture, he affirmed, did not enter the dwelling unless Allah at the same time caused low-mindedness to enter also.

* Previous articles on "The Garden in Antiquity" by the Rev. Hilderic Friend appeared in our issues for February 7; February 21; March 12; April 11; April 25; May 30; June 20; July 25; August 8; August 22; September 12; September 26; October 17, and October 31, 1925.

Although much has been written respecting the flora of Arabia, and, as we shall find, we are greatly indebted to the Arabs for many vegetable products together with their names, little seems to have been written respecting their garden-craft. I have, therefore, fallen back on notes culled during long years of study, for such facts as may be of interest to the horticulturist. If our studies had embraced agriculture much interesting matter might be added, seeing that the Nabatheans would have come under our purview. What they did for this science, however, must be reserved for separate treatment. Our field is still sufficiently wide, since the Arabs have brought their influence to bear upon a vast tract of country, from the Persian Gulf to the Mediterranean, and from the Red Sea through Sinai, Midian and Syria to Damascus. We shall find that not only had Mahomet his Paradise, but that within these bounds monks in their retreats cultivated the ground from very early times, while herbs and products of high renown became articles of commerce. It is, at first sight, rather curious to notice that books dealing with the plants of these lands are concerned, not so much with brilliant flowers like the Tulip, Lily and Rose, as with perfumes and aromatics. But two facts have to be borne in mind. The first is that the flowers we now so greatly admire owe very much to recent cultivation. The original Tulip, for example, was comparatively unattractive. Then we must remember the peculiarity of plants which grow in dry and desert lands. Foliage is often reduced to a minimum, and, as Burton, writing on the botany of Arabia remarks, "Several species exude gums or resinous matter that encrusts their stems. Many of the plants have glaucous stems or leaves, or are completely covered with a hoary pubescence. Not a few are viscous, adhering to the hand like glue; and a large proportion is distinguished by more or less pungency or aromatic odour—qualities always possessed by the growth of the desert." Hence the traveller cannot help admiring the desert flora, the perfumed forms of vegetation being "small, tender and *mignonne* as that of Iceland, and filling the liberal air with its lavish fragrance."

These fragrant woods, aromatic gums, and perfumed products of nature were highly prized. They yielded balms and medicines, wholesome drinks and foods, material for incense and drugs, peculiarly useful where sanitation was at a discount, and bad smells were supposed to breed disease. By fumigation they could minimise the annoyance of mosquitos and other noxious insects, while the woods which were so endowed by nature were usually of a very durable character and thus served many ends.

An extract or two from the records of recent travellers may help us, because they show that garden-craft has in some places attained a high state of perfection—an indication that it is not a thing of recent introduction. Palgrave, speaking of Matrah, states that "Every Monday a general rendezvous takes place of the countrymen and villagers from the interior, with fruits and vegetables, sweet potatoes, badinjans, melons, gourds, apricots, grapes, peaches and mangoes according to the season. The last named fruit is what Indians term the Junglee variety. A very common article of sale is a large nut, two or three inches long, triangular in shape, and brown in colour." There follows a note on Dates, of which many kinds and grades are to be purchased in different parts of Arabia. Treating of the vegetation of another part of the country this writer remarks that it may compete in luxuriance with that of the Indian Koucan, which it greatly resembles. "Mango trees, the cocoa-nut, the betel-palm with several other sylvan productions, as the wide-spreading Aale, the Kathol or Jack-fruit, the Jambhu here decorated with the borrowed name of Khowkh, the Papay so frequent about Bombay—not to mention many

lesser shrubs and undergrowth of the tropical flora, are here mingled with the date-palms and Ithel which yet remain, as though to witness to the identity of the Arab soil." Then we have a striking list of the varied products of cultivation, such as Cotton, Coffee, Indigo, Sugar cane, Yams, corn, Maize, Millet and Legumes of many kinds, together with Apricots, Peaches, Nuts, and possibly Apples. Fertile vineyards clothe the sides of Jebel Akhdar, affording excellent Grapes and wine. Thus we see that in some parts of Arabia gardening and agricultural operations have long been established.

A pretty sidelight on this subject comes down to us from the fourth Century of our era. Gardens at the Monastery on Mount Sinai are written of about the year 385 A.D. by a lady of rank who is known to history as St. Silvia of Aquitaine. "Though the holy mcount of Sinai itself is all rocky . . . there is a little plot of ground where the holy monks diligently plant shrubs and lay out orchards and fields." As Dean Stanley remarks, "Eastern gardens are not usually flower beds and borders, nor are they generally private grounds laid out ornamentally, except in the case of royalty or the very wealthy. They are the orchards, vineyards, Olive plantations, and Fig enclosures, which in most instances are outside the walls of the town or city. Hence we must often translate the word for field by garden, as when one speaks of the Lilies-of-the-field." "How much may be done by a careful use of water, and such soil as the desert supplies," writes the Dean, in his description of Sinai, "may be seen by the gardens at the Wells of Moses and the gardens in the valley of Jebel Musa, under the care of the Greek monks of the Convent of St. Catherine . . . There in the midst of the desert the traveller hears the accents of the Greek tongue; sees in the gardens the produce, not of the desert or of Egypt, but of the Isles of Greece; not the tamarisk, or the palm, or the acacia, but the olive, the almond tree, the Apple tree, the poplar, and the cypress of Attica and Corcyra."

Writing of one district in Arabia which he calls the Djowf, Palgrave states that the gardens are much and justly celebrated. "They are of a productiveness and variety superior to those of Jebel Shower of the Upper Nejed, and far beyond whatever the Hedjaz and its neighbourhood can offer. Here we found the date palm a main object of cultivation. The apricot and peach, the fig tree and the vine abound throughout these orchards, and their fruit surpasses in copiousness and flavour that supplied by the gardens of Damascus, or the hills of Syria and Palestine. In the intervals between the trees or in the fields beyond, corn, leguminous plants, gourds, melons, and other plants are widely cultivated. Here, too, the traveller sees the irrigation indispensable to all growth and tillage in this droughty climate kept up by running streams of clear water, whereas in the Nejed and its neighbourhood it has to be laboriously procured from wells or cisterns." (*Central and Eastern Arabia*, 1. 58. 9.). The Apricots are fully mature by the end of May, and the vintage falls in July, while Peaches and Dates ripen in August and September. The gardens are enclosed by high walls formed by unbaked bricks, and are intersected by a labyrinth of little water-courses, passing from tree to tree and from furrow to furrow.

The usual Arabic name for a garden is *Jannath*, a word which comes from the same Semitic root as the Hebrew *Gan*, the Syriac *gannetha*, and the Assyrian *gannatu*. This root is *ganan*, to cover or protect, "the garden being secluded from the surrounding uncultivated country and the incursions of strangers, and concealed by overshadowing trees from observation." We are also told that in the East gardens, parks, and Cucumber plots were provided with scarecrows to ward off evil spirits as well as birds and beasts. *Hilderic Friend*.

PLANTS NEW OR NOTEWORTHY.

BRUNSDONNA PARKERI.

THE history of this most beautiful of all semi-hardy Amaryllids has been given at various times in *The Gardeners' Chronicle*.* Without troubling the reader with repeating here what he may find in these ancient records, I will note some interesting facts in the raising of this bi-generic hybrid:—

We have at least four records of the crossing of *Brunsvigia* and *Amaryllis*, the earliest dating back to 1825-26 (Herbert), and then followed in succession Bidwell (1841), Lady Parker, and Messrs. Van Tubergen, Junr.

On account of their rarity, no one can have a wide experience of the incidence of dominant male and female characters in

ments, and it is exceedingly difficult, if not impossible, to grow this genus in England. Herbert was always in trouble with it. At one time, twenty years ago, I had a dozen scapes of *B. Cooperi* and nineteen scapes of *B. Josephinae* in flower at the same time. I had about one hundred bulbs of the two species under cultivation and raised seedlings of both, but now I have only one bulb left. Apart from improper cultivation, the main cause of death is a fly (*Lonchaea vaginalis*) which lays eggs in the woolly tunics which characterize this genus.

On the other hand, *Amaryllis* has a strong constitution, and, even if in some situations it does not flower freely, it is very difficult to kill the bulbs.

Accordingly, we find that all the bulbs of *Brunsdonna Parkeri* raised on *Brunsvigia* are difficult to grow. Herbert's bulbs apparently

was shown in flower at the R.H.S. so far back as August 18, 1875,* presents no real difficulty if its simple requirements are attended to. It should have a temperature during summer of a few degrees in excess of the requirements of *Amaryllis Belladonna*, and should not have its foliage exposed to more than a few degrees of frost. On no account should any attempt be made to grow it in a pot. Its proper home is planted out in a slightly raised bed in an unshaded greenhouse where a fairly high day temperature is maintained in summer. Such a structure as is devoted to Cacti, *Nerines*, *Lycoris* and similar sun-loving plants will suit them. June and July should be a period of complete drought, and water be freely given in August and at intervals of from one to three weeks when in full foliage. In the cultivation of all bulbous plants with a short growing period, it is necessary to encourage

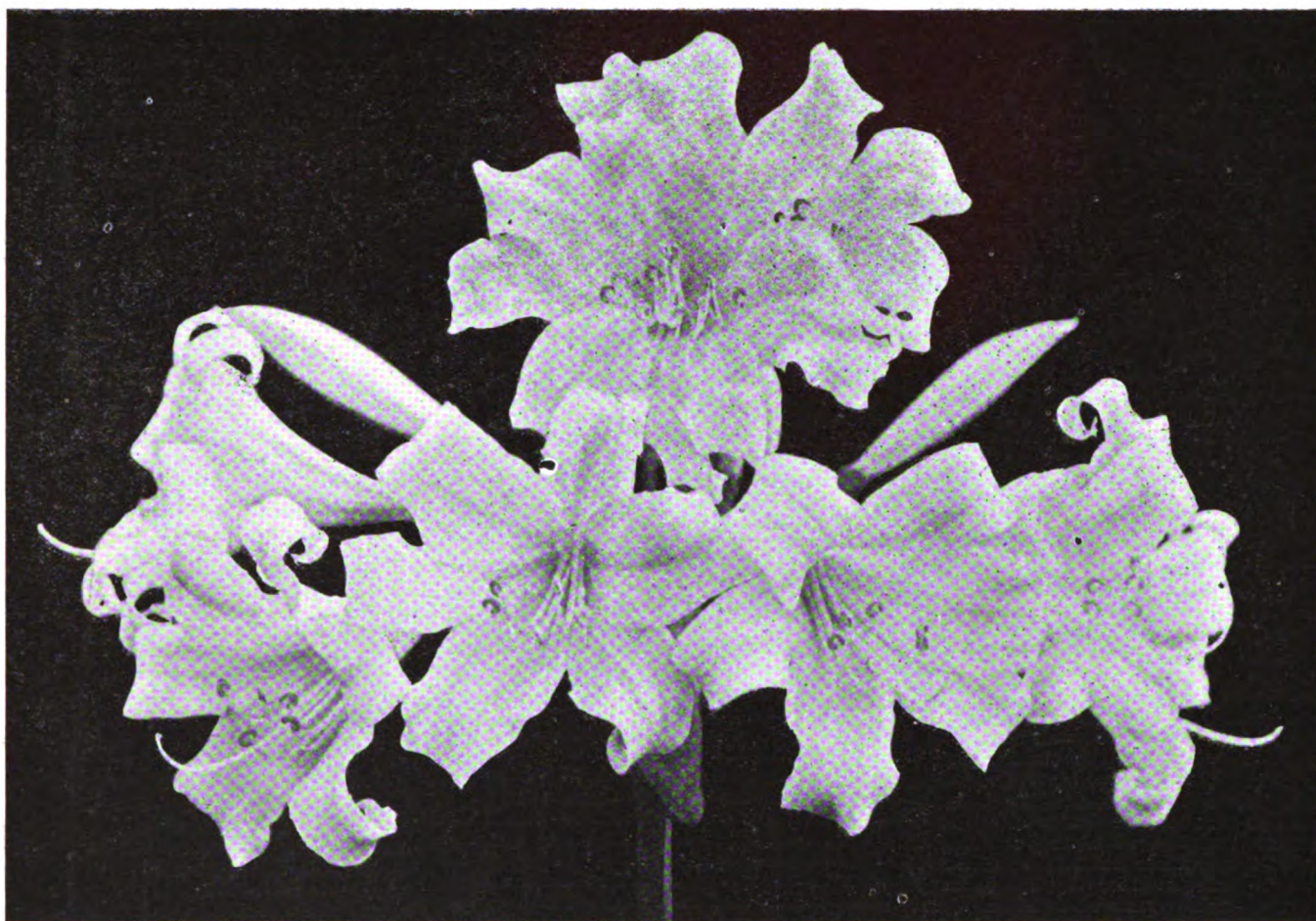


FIG. 164.—BRUNSDONNA PARKERI VAR. ALBA.

bi-generic hybrids among bi-sexual plants. From my own experience, in the case of *Brunsdonna Parkeri* and of *Ismene festalis* (*Elisena longipetala* × *Ismene calathina*), it is evident that Mendelian laws, applicable in great measure to plants of mongrel races, do not apply in their entirety, if at all, to bi-generic hybrids. It is also evident that, in the case of *B. Parkeri*, mother-kin is dominant in most characters.

For instance, both Herbert and Messrs. Van Tubergen used *Brunsvigia Josephinae* as the seed-bearer, and the progeny raised by Messrs. Van Tubergen resemble *Brunsvigia* more than *Amaryllis*, and are quite distinct from the progeny which we possess of the reverse cross raised by Bidwell and Lady Parker, which latter resemble a giant form of *Amaryllis*, and were classed as such for many years. Herbert's crosses apparently died without flowering. *Brunsvigia Josephinae* has special require-

never flowered; Messrs. Van Tubergen's cross, although one grower in England has succeeded with it, has presented great difficulties to me; and Bidwell (who raised the hybrid both ways) remarks that he could never keep alive the hybrids raised on *B. Josephinae*, although those raised on *B. multiflora* did rather better. And this was in the favourable climate of Sydney, N.S.W.* On the contrary, the Bidwellian and Parkerian hybrids raised on *Amaryllis* flourish wherever they go, and I have never lost a single bulb, or seedling, or seen one in bad health.

The flowering of this splendid plant which

* J. C. Bidwell was superintendent of the Botanic Gardens at Sydney, N.S.W., when he died in 1853. Sir Henry Parker was, subsequently, Governor of N.S. Wales. There was also a gardener named Parker at some time employed by Dean Herbert. When it was stated that the name "Parkeri" had been given to this hybrid "for reasons of priority," I supposed that the donor of the name had gone back to Herbert's garden, in which this cross was first made. But this was not the case, and it is known that, in giving the specific name, both the cross made in Herbert's garden, and subsequently by Bidwell, were overlooked.

growth by liberal feeding. In this way years may be saved in producing flowering bulbs. No chemicals, or mixtures of unknown character, should be used. Wood-ash is beneficial.

In order to adhere to the rules of nomenclature formulated by the International Convention, and for other, and even more obvious reasons, it is clear that an intergeneric hybrid cannot bear the generic name of either parent. Hence the generic name of *Brunsdonna*, given by Messrs. Van Tubergen Junr, must be adhered to, and *Amaryllis* must be deleted.

There is only one other way in which this difficulty of generic names can be overcome, and that is by claiming that one of the two parent genera is a "bad" genus, and should have its name deleted *in toto*. But this cannot be done unless conclusive evidence is brought forward that one genus is badly founded.

* *Gard. Chron.*, July 29, 1850, p. 470; February 6, 1909, p. 92; January 23, 1909, p. 57; *The Garden*, November 19, 1898, p. 414.

* By W. Bolvell, gardener to Sir H. W. Parker, of Stawell House, Richmond. See *Gard. Chron.*, New Series, Vol. IV, p. 243; also *The Garden*, viii., p. 166.

Certainly Herbert had doubts about *Brunsvigia*, and wished to attach *B. Josephinae* to *Amaryllis*, and also *B. grandiflora* and *B. Slateriana* (*B. Banksiana*). He may have been right, but one cannot delay the naming of a new plant until all vexed questions have been settled, and the generic name of *Brunsdonna* can claim no better title to respect than are carried by the names *Brunsvigia* and *Amaryllis*. It is true that in the case of my bi-generic hybrid, *Elisena longipetala* × *Ismene calathina*, I adhered to the name *Ismene*, and I did so because I am convinced that, whatever may be true of the whole genus *Hymenocallis*, the *Ismenes* and *Elisenas* are all species of one genus.

Among Cactaceous plants we have just the same difficulty as between some species of *Cereus* and *Phyllocactus*. Those *Cereus* that will carry fruit in our glasshouses will inter-breed more freely with any sort of garden *Phyllocactus* than they will with other *Cereus*, or with their own pollen. Prof. Dr. Karl Schumann* corresponded with me on this head, and agreed that several alleged genera of Cactaceous plants could not be maintained as "good" genera, but that the names, as he thought, served some purpose as group names for sets of species. In other words, that they were good as sub-generic and not as generic titles.

In accordance with the above standards of nomenclature, all crosses between *Brunsvigia* and *Amaryllis* should bear the generic name of *Brunsdonna* (for which Messrs. Van Tubergen obtained priority) and the specific name *Parkeri* (for which the late W. Watson obtained priority on February 6, 1909), should be given to all hybrids between *Brunsvigia Josephinae* and the several forms of *Amaryllis Belladonna*.

Varietal names—such as *Tubergeni*—should be used to distinguish between the reverse-cross plants raised by Messrs. Van Tubergen, Junr., and those raised by Lady Parker and by Bidwell, for the former† are quite distinct from the latter. *B. Parkeri alba* (Fig. 164) was raised by myself, and first flowered in 1911. It is fertile, and is probably not a true albino. *A. Worsley, Islcworth*.

FRUIT GARDEN.

LIFTING FRUIT TREES.

To be successful with cordon, bush, or other small trees they should be well attended to at the roots, otherwise the chances are they will make too much wood growth and fail to fruit. Lifting the roots and improving the soil are also the best remedies for the other extreme—viz., abundance of bloom, followed by comparatively worthless fruits and little or no wood. What is wanted in all cases is an abundance of root fibres near the surface.

Lifting, if properly done, is one of the best means of correcting downward root action; good surface culture, mulchings of manure, or, better still, half-decayed leaves and manure from old hot-beds, will do the rest. If annual or biennial liftings, partial or complete, cannot be resorted to, the least that can be done in the case of all young trees is to lift and lightly root-prune during the second or third winter after planting. This may give a temporary check to the top growth, which, in the case of wall trees with plenty of head room, may be thought undesirable, but it will most probably obviate the necessity for more drastic measures later.

In all cases where trees must be kept in a rather small area, severe pruning being resorted to if necessary, it pays to lift the trees every season. A mass of roots is then

formed, and not the slightest ill-effects to the crops result from the lifting, nor is it a great undertaking. A fairly wide, deep trench should be opened at about four feet from the stem of the tree, and from this the roots may be undermined, all except the deep-growing roots being preserved, and again relaid in a mixture of old soil and either fresh loam or half-decayed leaf-mould. The roots take possession of the fresh compost during the next growing season, and fruits of the best quality, frosts permitting, result.

Pyramid and espalier-trained Pears on the free-growing or Pear stock, and which it is desirable should increase considerably in size, must not be so severely handled, but if carefully undermined so as to cut through or bring up the deeply-growing roots every third year, and the roots are exposed and relaid in fresh compost, the top growth will be both sturdy and fruitful, the quality of the fruit being greatly improved by this treatment. Apples, Cherries and Plums repay for similar treatment at the roots, the longevity of the trees as well as their productivity being fostered by good root culture. *James A. Paice*.

PROBLEMS OF FRUITING.

ON reading the leading article on p. 301, entitled "The Aftermath of Fruitfulness," several questions immediately presented themselves to my mind.

Treating on biennial-bearing in Apples, the writer of the article states:—"It is not sufficient to thin severely this year's crop immediately the fruits are set, but in order to make next year, which should be barren, a fruitful one, the flower-buds themselves must be thinned." But as this does not always bring about the desired result I venture to ask, Why is it that Peach trees, Nectarine trees, and Grape vines under glass not only bear consistently but bring good crops of fruit to perfection each season?

Full crops of stone fruits, such as Peaches and Nectarines, must take a tremendous lot out of the trees and also the soil, and yet in a long series of years in cultivating these fruits in Kent I never experienced a total failure with either of these crops.

Take the case of Vines; ordinary varieties each season probably produce six times more bunches than the grower dare leave. The berries finish well, seeds are ripened, and year after year plenty of fruit is produced. I am speaking, of course, of Vines and Peach trees in normal good health.

My experience has been that Peaches and Nectarines are invariably a picture when in bloom, usually set ten times the amount of fruit that the trees can carry, and continue to do this year after year.

Why do the Cherry trees in the orchards in Kent invariably bloom well, and—if climatic conditions are favourable—set an abundance of fruit?

Why, also, is the Morello Cherry a consistently good cropper, even when the trees are trained on north and east walls and thus exposed to the most inclement weather conditions?

Why is it, year after year, in the annual reports of the fruit crops, the crops of bush fruits are usually recorded as of average or over-average quantity?

All these points seem to have a bearing on the subject of the article. And I could go on indefinitely.

Last season I saw many Holly trees laden with berries late in the spring; this year, in this locality, Holly berries are a rarity.

In spite of the fact that we often put this or that failure of a crop down to climatic conditions, the results do not always bear this out.

I have also noted the fact that where *Rhododendron* seed-pods had been picked off early, flower-buds formed the same year. I can show examples of this happening in the present year, and so much has this impressed me, that it seems that the removal of the pods should be part of the routine work, at least in the case of good varieties.

In this, however, we are going back to very old practice; in the days of specimen *Azaleas*, etc., so soon as the blooms faded the embryo seed-pods were at once picked off, and usually the plants flowered consistently year after year. It occurs to me that in this direction alone there is endless work for our horticultural scientists.

As fruit growers, we fondly imagine we sometimes play a tremendous part in bringing about a crop of fruit, but what about the immense weight of Acorns, Beech-masts, Chestnuts, etc., which one often sees—probably as often as a bumper crop of Apples or Pears—but with no help from us, and on trees that have grown in the same ground for perhaps a hundred years.

It seems to me that we are even now only on the fringe of things, to take the question of fruit culture alone. *J. G. Weston, Chatsworth Gardens*.

FRUIT REGISTER.

APPLE BEN'S RED.

ON page 316 Mr. Geo. H. Copley writes on "Three good Apples." With his praise of Apple James Grieve I entirely agree, and no planter should omit this excellent second-early, dessert variety.

At the recent R.H.S. fruit show some splendid examples were seen, and one rarely hears a word against this Apple.

Stirling Castle I consider one of the best mid-season culinary Apples, and it is especially good for planting as a bush on the Paradise stock in a small garden. It comes into bearing quickly and rarely fails to give a crop.

My experience of Ben's Red is entirely different from Mr. Copley's. I planted it in Kent soon after its introduction by Messrs. G. Bunyard and Co., and after watching it closely for some years I considered it rather a poor thing, and I have rarely met anyone who was pleased with its behaviour. It would be interesting to hear other opinions on this Apple. I exhibited a dish of this variety at one of the R.H.S. shows and it was awarded first prize, but I should not call it a "first-class dessert Apple," and have never recommended it, though I thoroughly believe in trying varieties in order to test their qualities under varying conditions.

I should like to say a word in favour of St. Everard, which is an early dessert Apple. I planted this when it was introduced by Messrs. J. Veitch and Sons and considered it one of the best flavoured early dessert Apples, giving distinct evidence of its parentage, Cox's Orange Pippin × Margil. It has strong, healthy and distinct foliage, and usually makes short, stiff growths. *J. G. Weston, Chatsworth Gardens*.

APPLE KING HARRY.

This very distinct dessert Apple (Fig. 165) originated, apparently, in the neighbourhood of Woodstock, Blenheim, for the earliest trees that can be traced were sent by Mr. R. Manning, of London, to the Royal Horticultural Society's Gardens from that district. We remember a very large standard tree of this Apple in Mr. A. Barron's time in the R.H.S. Gardens at Chiswick, and this may have been the original tree received from Mr. Manning. Mr. Barron thought very highly of this Apple, which is not well known and rarely listed in catalogues.

Hogg describes it as a dessert Apple of high quality in use from October to November. He also states that the flesh is tender, but our experience is that it is somewhat hard, although very juicy, sweet and of fine flavour.

This Apple is of very regular shape with lemon-yellow skin spotted very freely with large russet dots, so that it is an easy variety to recognise. The growth of the tree is moderately strong and upright. The tree is a very good cropper, and those who are contemplating planting fresh sorts of Apples this autumn will do well to include a tree or two of this useful November dessert variety.

* Author of *Gesamtbeschreibung der Kakteen*, etc., and probably the greatest authority of all time on the Cactaceae.

† *Gard. Chron.*, January 23, 1909, p. 57, with plate of *Brunsdonna Parkeri*, var. *Tubergeni*. See also *Journal R.H.S.* for November 1909, p. 226, *et seq.*, giving a description of *B. Parkeri*. In *Bulletin Soc. Toscane di Orticoltura*, 1895, appear figures of four varieties, named *Amaryllis alba*, *A. stenopetala*, *A. magnifica*, and *A. carminea*. These are said to be hybrids between *Brunsvigia* and *Amaryllis*, but I know nothing about them.

A HISTORICAL NOTE ON SOME POTATO VARIETIES AND DREEDERS.

(Continued from page 374.)

FROM a naturally fertilised seed ball of Garnet Chili, Albert Bresse of Hubbardston, Vermont, U.S.A., grew Early Rose, in 1861. On the authority of Messrs. James Thorburn and Co., New York, by whom it is stated to have been raised*, Late Rose is said to be a seedling of Early Rose. A number of other American varieties, including Burbank and Early Ohio, are natural seedlings of Early Rose. Early Rose is still grown in Britain and America. In addition, however, it is also cultivated in Italy and Germany. It has been utilised to a large extent by British and foreign breeders. Magnum Bonum is stated to be derived from a seed of a plum taken from Early Rose. Schoolmaster was the result of a cross between Early Rose and Victoria. Beauty of Hebron was also derived from Garnet Chili, by E. L. Coy, Hebron, N.Y., and has been grown largely in this country as Puritan. Findlay's Jeanie

from the true seed, the Potato would die out. He imported Potatos from Central America, Chili and other places, and planted these promiscuously with the Rock Potato. Most of the plants produced flowers but only a few carried plums. From the seed thus obtained, many of his varieties were derived. Paterson put the following varieties on the market:—York Regent, White Rock, Blue, Early Red Kidney, White Kidney, Early Napoleon, Regent, Alexandra, Red, Zebra, Early Perfection, Princess of Rome, British Queen (the first), New Perthshire Red, Red Regent, Irish Blue, Scotch Blue, Blue Kidney, New Albert, Fortyfold, Bovinia and Victoria. Victoria was his greatest success, and from it have been derived, either directly or indirectly, most modern British varieties. It was introduced in 1863, and, as previously mentioned, it has been stated to be a natural seedling of the Fluke. It had a very hardy constitution, was a very good cropper and bore flattish, oval tubers, which, when cooked, were mealy and richly flavoured.

J. Clarke, Christchurch. The raiser of Magnum Bonum, Maincrop (Langworthy) and Abundance is surely deserving of an honoured place amongst Potato raisers. The first of these

Sons, Reading. They include Early Market, Reading Russet, Rector of Woodstock and Bountiful. The first two are still grown. Early Market is reputed to be a cross between Old Ashleaf and Turner's Union Round†, while Reading Russet had for its parents Bountiful and Late Rose†. Fenn used American varieties freely in his crosses, the first of which was made in 1857.

Archibald Findlay. Probably no individual has placed so many Potatos on the market as this breeder. He is responsible for the following varieties, viz.: Bruce, Up-to-Date, British Queen, Jeanie Deans, Evergood, Royal Kidney, Northern Star, Majestic, Katie Glover, Di Vernon and Catriona. Apart from these, however, there are a number of other lesser known varieties which stand to his credit, e.g., Mairsland Queen, Farmer's Glory, Ruby Queen, Conquest, Eightyfold, Gold Reef, Diamond Reef, K. of K., etc. Findlay begun his hybridising experiments first for amusement in 1877. At the beginning he contented himself with ordinary horticultural varieties for prize taking. Apparently in all his varieties there is some Victoria "blood," for we find him stating to the Glasgow Discussion Society in 1905:

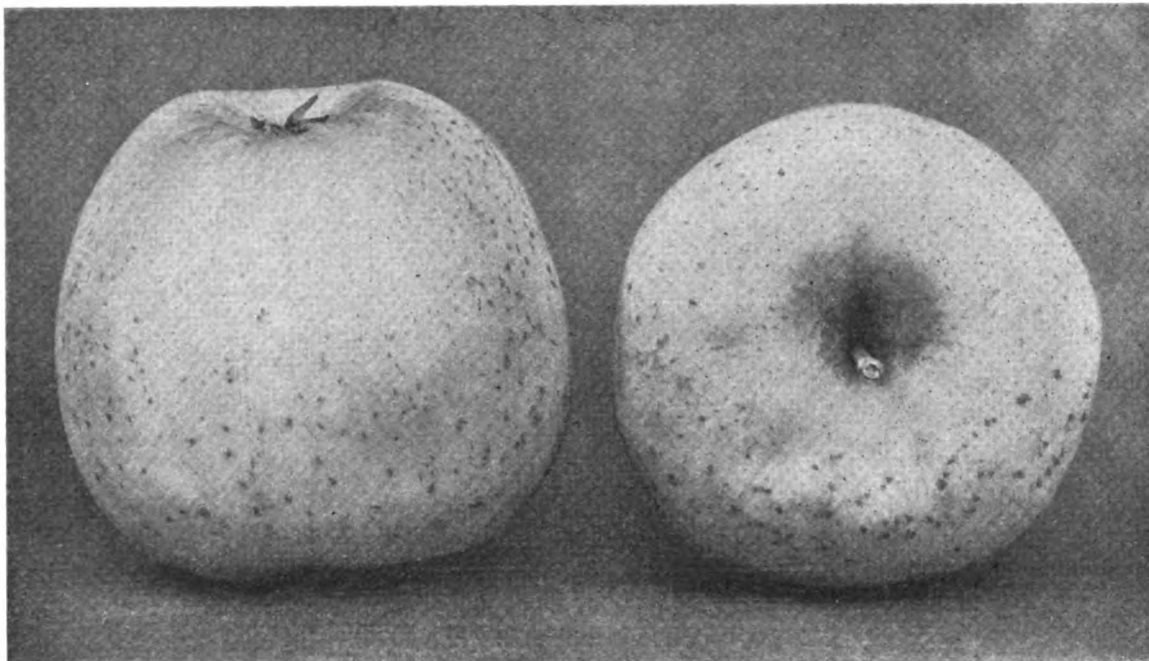


FIG. 165.—APPLE KING HARRY.
(see p. 392).

Deans is derived indirectly from Beauty of Hebron, while his Bruce is said to be the result of a cross between Late Rose and Victoria. Early Market and Reading Russet are alleged both to contain Late Rose "blood." Early Rose has been used as a parent for the following Continental varieties: †Richter's Imperator (Charles Fidler), Juwel and Schneeflocke, and Cimbal's Ella, Feodora, Iris and Vesta. Cimbal's Lucie is the result of a cross between Early Puritan (Beauty of Hebron) and Wilhelm Horn.

Wm. Paterson. Born in 1810 at Seafeld, Dundee, Paterson ‡ commenced experimenting with Potatos when in his teens. He took up business on his own account in 1833. During the "blight" years he worked with government officials to enquire into the cause of the disease, and, if possible, to find an antidote. He was of opinion that there was no cure, blight being caused by atmospheric action on the plant, which, having the germs of the disease within itself, was destined to serve only its generation, and that without constant and regular renewal

varieties, Magnum Bonum*, was raised from seed taken from an Early Rose plant, presumed to have been crossed with Paterson's Victoria. The crossing, however, was not carried out by any human agency, and as it is well known that the amount of natural crossing which takes place is relatively small, it may reasonably be assumed that the variety is just a seedling of Early Rose. Clarke sent tubers of Magnum Bonum to the trial ground at Stoke Newington, which was managed by Mr. Shirley Hibberd. Hibberd was so taken with the variety that he introduced it to Messrs. Sutton and Sons, of Reading, who purchased the stock and introduced it in 1875. Compared with other varieties of that date, Magnum Bonum was a good disease resister. It is still grown on the Continent, and was widely grown in England about 1890. Maincrop Kidney, according to Findlay,† was a natural seedling of Victoria. Langworthy (Niven) is identical with it, and Golden Wonder (Brown) differs from it only in having a russet skin.

Robert Fenn. The varieties produced by Fenn were introduced by Messrs. Sutton and

"Individually, for breeding purposes, I would not give a farthing for any Potato if I could not trace its descent from the Victoria on the male or female side." According to himself, his first real success was the Bruce, which, he informs us, was the result of cross-fertilising the Late Rose with the Victoria. It is decidedly curious how Clarke's Magnum Bonum and Findlay's Bruce are so similar, both in form and reaction to diseases, that the names are classed as synonymous in official publications. It is highly probable, however, that the Bruce has been out of cultivation for a considerable time, and that the official coupling of the two names has had its origin in an examination of two samples of Magnum Bonum. Undoubtedly the greatest success of all was Up-to-Date, the result of a cross between Victoria and a seedling of the Old Blue Don. This variety is probably the best all round Potato ever put before the public, and it is still extensively grown in Britain, America, and the Continent. T. P. McIntosh.

(To be concluded).

* *The Gardeners' Chronicle*, 1872.

† Dr. K. Snell. *Karloffsorten*, 1925.

‡ G. Gibb. *Scottish Farmer*, February, 1922.

* A. Dean. *Journal Royal Hort. Soc.*, 1890.

† A Findlay. *The Potato, its History and Culture*, 1905.

* *The Gardeners' Chronicle*, 1880.

† *The Gardeners' Chronicle*, 1887.

VEGETABLE GARDEN.

THE CABBAGE.

(continued from p. 356).

It is manifestly impossible to incorporate detailed descriptions of three hundred varieties, more or less, of Cabbage in an article of this description, for many of them are synonyms and others have almost gone out of cultivation; neither is it of any great use, seeing that strains vary in different districts although derived originally from one and the same source: some are standard varieties in general demand, while others are purely local or personal. The wisest course appears to be to take the catalogues of a wholesale firm of seed growers and merchants that has had a continuous existence for say one-hundred-and-fifty years, give a complete list from the earliest catalogue available and add the names of new varieties with the dates of their appearance.

As regards descriptions it must suffice to indicate the form and relative earliness. As Cabbages are divided into three forms, conical, round-headed and drumhead, and as these are sub-divided again into early, mid-season and late, the insertion in capitals of C.E., C.M. or C.L.; R.E.E., R.H.M. or R.H.L.; and P.E., D.M. or D.L. is all that is necessary. Messrs. Cooper, Taber and Co., Ltd., is the only London wholesale firm of seed growers and merchants with a continuous history, but with sundry changes of firm name, from the middle of the eighteenth century. In *The Gardeners' Chronicle* for November 15, 1913, a full history of the company up to date, prepared by the writer, is given. It is not necessary to do more now than to state that since the formation of the company in 1887 by the amalgamation of the businesses of Robert Cooper, London, with George Taber, Witham, five wholesale London seed firms have been incorporated therewith.

In the library of Messrs. Cooper, Taber and Co. are preserved copies of the catalogues issued by the house, beginning with that of John Mason, 1793 and 1800, John Mason and Son, 1816-1826, and then, with occasional breaks, to the present day. As the company, which is wholesale only, does a home, colonial and foreign business, catalogues in the French and German languages are included. Messrs. Cooper, Taber and Co. have kindly permitted me to make use of these catalogues for the purpose of this article, and I propose to start with the full list of Cabbages offered by John Mason in 1793 and then give a list of the additions which follow in chronological order with the dates of their appearance.

As the catalogues are wholesale it may happen that a new variety would not be inserted until it had been proved to be distinct, useful, and likely to be in demand. It would therefore be safe to allow a margin of two or three years for this to be done. It is hardly necessary for me to add that these are the quotations of one firm only; other firms in existence at the same time doubtless quoted many varieties that are not included in these catalogues, and omitted some that are. For many years it was customary to finish up with the line "With many other sorts too numerous to mention."

Readers will please note that the prefix A. indicates varieties that are adapted for autumn sowing. All varieties are equally valuable for sowing in the spring.

John Mason in 1793 quoted the following:—Mason's Earliest Dwarf, C.E.; Early Yorkshire, C.E.; Early Russia, C.E.; (A.) Early Sugarloaf, C.E.; (A.) Early Battersea, C.E.; (A.) Early Imperial, C.E.; Mason's Transplanted Drumhead, D.M., for winter; Common Scotch ditto, D.L.; Red Dutch, R.H.M.; Hollow long-sided, C.L.

Additions in 1816:—(A.) Late Battersea, D.E.; (A.) Flat Battersea, D.E.; (A.) Late Sugarloaf, C.L.; in 1823—Knight's New Early, C.E. (it is supposed that this was raised by a famous

President of the R.H.S.); in 1828—(A.) Wellington, C.M.; in 1830—Vanack, C.M.; in 1833-34—Early Cornish, C.E.; Early Emperor, C.M.; in 1836—Early Nonpareil, C.E.; in 1841—Early Hope, C.E.; in 1843-44—Early Large Wakefield, C.E.; in 1844-45—Early Pailington, C.E.; (A.) Stone's Sprothoro, C.E.; Large York, C.E.; in 1847—Noble's Superb Dwarf, C.E.; Shilling's Queen, C.E.; in 1848—Reynold's Imperial; (A.) London Market, C.E.; Thousand Headed; Flat Dutch, D.E.; in 1849—Purple Turnip-rooted or Kohl Rabi; in 1849-50—(A.) East Ham, C.M.; in 1850—Kentish, C.; (A.) Enfield Market, C.M. (at this time Cucumber, Melon and Love-Apple were quoted as flower seeds); in 1851—Cattell's Reliance, C.E.; (A.) Cattell's Dwarf Barnes, C.E.; King of the Cabbage, C.M.; (A.) Wheeler's Imperial, C.E. (raised by George Wheeler, Warrminster Nurseries, which were founded in 1773 by his father; the business is still carried on by the great grandsons of the founder); Marrow Cabbage, Green Kohl Rabi and Cabbage, Turnip-rooted underground (White Swede); in 1852—Atkin's Matchless, C.E.; in 1856-57—Blenheim, C.M.; (A.) Mitchell's Prince Albert, C.E.; Paradise Marrow; Plaw, C.M.; Prince of Wales; Shephard's Large Early Marrow, C.E.; Colewort; Hardy Green; Colewort, Rosette (for many years these were sent to the market neatly tied up in bunches, to-day everything is sent up in bags); in 1873—Bailey's Superb; Champion; Sealey's, C.E.; Hill's Incomparable, C.; Jenkinson's Defiance; Little Pixie (Wrench); (A.) Pearson's Conqueror, C.E.; Wright's Improved Early Market, C.E.; Robinson's Champion Drumhead, D.L.; Fearnaught Hybrid; (A.) Circuit's Early Rainham, C.E.; President Early Dwarf, C.E.; Wheeler's Cocoa Nut, C.E.; William's Early Nonsuch (in this year New Queen Onion was sent out in 1½ packets, and Veitch's Autumn Giant Cauliflower in 16 packets); in 1878—Anderson's Nonsuch, (A.) Mein's No. 1, C.M.; (A.) Carter's Heartwell, C.E.; Downton Castle (in this year Dickson's Eclipse Cauliflower was sent out in 2½ packets); in 1881—Chou de Russie; (A.) Ellam's Early Dwarf Spring, C.E.; in 1885-86—Winnigstadt, C.M.; (A.) Manchester Market, C.M.; Daniel's Defiance, C.L.; Red Drumhead, D.L.; (A.) Myatt's Offenham or Evesham, C.E.

Here I may stay my hand in regard to British varieties, not because no other firm's novelties have been forthcoming since that date, but as many of the raisers are still with us and continuing their activities in this direction I may refer enquirers to their catalogues, which are freely offered, and in which will be found more detailed and up-to-date information than the writer can give. Before quitting this branch of the subject, mention should be made of Sutton's Harbinger, which has in it the beginnings of a new race, and which, if the development of size and hardiness are persistently aimed at, will more than fill the gap caused by the neglect of the bunching Coleworts, once so highly and justly esteemed. S. B. Dicks.

(To be concluded).

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

White Fly.—Now that the new White Fly fumigant, calcium cyanide, is being discussed in your columns, it would be very helpful to know how the older remedy offered by various firms for the last few years, as White Fly Fumigant, has proved effective. I have used it carefully in various houses at the strength advised by the vendors and even slightly stronger, and have been careful to make the houses as air-tight as possible; the flies all appear to be dead next morning, but after from twenty-four hours to forty-eight hours many of them recover and get up to the plants again. I have given a second dose

after two or three nights; this certainly killed a lot more flies, but I find the gas will injure several kinds of plants if used again so soon. C. West, Stopham, Pulborough, Sussex.

Training of Young Gardeners.—I was very much interested in the note by Mr. W. Auton, page 317, referring to Mr. W. W. Pettigrew's address on page 270, regarding the training of lads in horticulture as practised by the Manchester Corporation. I fail to see the absolute necessity of good physique provided that a lad is willing to learn and fulfil all the tasks set in a spirit that they are a means to an end. I agree that private gardens are by far the best places in which to receive preliminary training, say, for five years. As Mr. Pettigrew has quoted a specimen case of a practical gardener I will just give an instance that came under my notice in 1919. I was engaged with the first journeyman at Heaton Park in the operation of thinning Grapes, when Mr. Pettigrew walked through the house and his eye chanced to note some very crowded bunches on one of the rods. He remarked, "I see these want thinning badly," and received the reply of "No, Sir." He turned quickly and said, "How's that?" and the answer was, "they have failed to stone so they will not swell; it is a fault with Alnwick Seedling here." Perhaps Mr. Pettigrew will tell us how many of the Corporation apprentices passed the examination he set them in 1924 and if he was satisfied with the result. I quite agree that the training should commence in private service where there is not too much of one thing, so that a lad may gain a general knowledge in all branches. I received my first two years' experience in a garden where there were only three kept, with the result that I was always in touch with the head gardener and was told to keep my eyes open and not be afraid of asking questions. This man, I may add, has held some good positions. My second engagement was with an eminent plantsman who had the misfortune to be of poor physique, standing only five feet one inch although he was sixty-two years of age; his apprenticeship was partly served under that well-known gardener, botanist and poet, Mr. Stansfield, of Kersal. In conclusion I consider a man a gardener who has a good working knowledge of general gardening or who is a specialist in any one of the branches of horticulture, for I am certain that no man can be a walking encyclopaedia, specialist, botanist, and an up-to-date plantsman, with the numerous varieties of Roses, Carnations, Chrysanthemums, herbaceous and alpine plants available at the present day. Stanley Hilton.

Large Trees.—Under this heading in the issue of October 31, p. 357, mention is made of *Liriodendron Tulipifera*. The fine Tulip Tree at Loseley Hall, Guildford, was blown down in 1898. It was ninety-nine feet high and the trunk three feet six inches through at the base. The bole was sawn into planks and no doubt some of the timber exists there now. I have a walking stick made of it and it takes polish well and is very hard. There is, I believe, a specimen at Weybourne House, near Aldershot, and I planted one at Petersfield in 1912. J. Osmond, Harbury, Leamington Spa.

Roses on Graves.—The timely note on Roses on graves (p. 351) reminds me that the best feature I have ever seen on a grave was a crimson Monthly Rose bush. Gardeners are often asked what to plant on a grave, and the reply depends on the situation, soil, aspect, if shady or in full sunshine, but above all, on the amount of attention that can be given to the grave. I have covered a grave with fine dwarf grass, planted bulbs around the edges, and sunk a metal cross in the grass for displaying fresh cut flowers in the centre. In another case I planted the grave with small-growing, variegated Ivy, but I have seen nothing to equal the Monthly Rose. J. P.

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

NOVEMBER 5 and 6.—That there is a pressing need for a larger hall at Vincent Square was painfully evident to lovers of the Chrysanthemum during most of the afternoon of the first day of the annual show of the National Chrysanthemum Society, when the attendance was so great that progress could only be made at literally, a snail's pace, and, for several hours, note-taking was almost an impossibility. On the second day it was more comfortable, but, there was again a large attendance. This state of affairs is one of the penalties of great success, and while the Chairman, Committee and Secretary of the Society must have regretted the discomfort of the numerous devotees of the autumn flower and their inability to obviate it, they must have rejoiced at the great success of their show and the increasing popularity of the Chrysanthemum.

As Mr. E. F. Hawes, the Chairman of the Committee, reminded the members at luncheon on the Thursday, the Society had been instrumental in immensely extending the season of the "golden flower" and its variety during the eighty years it has existed. It is within the memory of some of the enthusiasts then present that formerly the season of the Chrysanthemum lasted for only a short four weeks, while now it extends well over half of the Society's year. The improvements in the flower itself, were patent in the exhibits at the show, which was the best in quality that the Society has ever held. While many preferred the more modern method of exhibiting the large Japanese varieties in vases by which their great charms could be seen and admired to the full, it was evident from the great and keen competition that there remains an indisputable demand for the old show boards, and while, for example, six growers will enter and compete in the very trying class for thirty-six distinct varieties of the largest type of show blooms, we feel confident that the Committee will feel compelled to continue competitions for blooms shown on boards. The appreciation of the visitors, who eagerly discussed the merits, and at times, failings, of these Goliaths of the Chrysanthemum world, also indicated, in no uncertain manner that the time for abolishing the show board is not yet at hand.

In the large open classes the competition was very good indeed, but there was a slight falling off in the classes for amateurs, although in all the quality reached a very high standard of excellence.

The large trade groups were of a magnificence never before seen at any Chrysanthemum show and the visitors showed their thanks and appreciation of the enormous amount of work these displays entailed by the close attention they paid and, it is to be hoped, by the orders they placed.

FIRST-CLASS CERTIFICATES.

Mary Godfrey.—See R.H.S. Report, page 378. Shown by Messrs. W. GODFREY AND SON.

Mrs. A. Holden.—A handsome exhibition Japanese variety of large size and perfect form. The broad, drooping florets are of rich terra-cotta colour, lightly flushed with crimson, and occasionally showing their old gold reverse. Shown by Mr. G. CARPENTER.

Mrs. R. F. Felton.—See R.H.S. Report, page 378, and Fig. 159, p. 383. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Ondine.—See R.H.S. Report, page 378. Shown by Messrs. KEITH LUXFORD AND CO.

OPEN CLASSES.

The William Wells Memorial Class, which requires three blooms each of twelve varieties shown in vases and is not open to the Trade, was a splendid feature of the show. The many blooms all reached a high standard of excellence and they continued fresh and bright till the close of the exhibition. The first prize was awarded to the LORD WANDSWORTH AGRICULTURAL COLLEGE (gr. Mr. E. H. Pearce), Long Sutton,

Basingstoke. This very fine exhibit which also won *The Gardeners' Chronicle* silver-gilt medal, included vases of Majestic, Mrs. R. C. Pulling, Mrs. George Monro Junr., Queen Mary, Mrs. B. Carpenter, Mrs. A. Davis, and Mrs. M. Sargent. In the second prize collection of T. E. RICHARDS, Esq. (gr. Mr. G. Tyler), Coombe Hall, East Grinstead, there were magnificent blooms of Mrs. H. Tysoe, Wm. Turner, Mrs. John Balmer, and Lord Stuart of Wortley.

There were only two exhibits of eighteen Japanese blooms, three blooms each of any white, yellow, pink, bronze, crimson and another colour, and here the first prize was won by Viscount HAMBLEDON (gr. Mr. W. Turnham), Greenlands, Henley-on-Thames, whose outstanding vases were of Queen Mary, Mrs. George Monro Junr., Majestic and Mrs. B. Carpenter. The LORD WANDSWORTH COLLEGE exhibit was a good second.

The six exhibits of thirty-six distinct Japanese varieties made an imposing array and in many instances the blooms were so large that the dimensions of the show boards were inadequate for their display. The first prize and Holmes Memorial Cup was won by E. J. MOCATTA, Esq. (gr. Mr. A. Holden), Woburn Place, Addlestone with a magnificent collection characterised by great depth of bloom and exceeding freshness. His chief varieties were Majestic, Mrs. George Monro Junr., Peace, Mrs. B. Carpenter, Mrs. C. Russell, Red Majestic, Mr. T. W. Pockett, Mrs. G. Drabble and Queen Mary. The second prize exhibit of the LORD WANDSWORTH COLLEGE contained splendid blooms of Norman Davis, Julia, Mrs. George Monro Junr., Mr. A. Davis, and Lady Talbot. Mr. T. E. RICHARDS had to be content with the third prize for a very fine exhibit in this excellent class.

Although there were only two exhibits of twenty-four distinct Japanese varieties, both were particularly meritorious. E. G. MOCATTA, Esq., was first, showing beautiful blooms of Princess Mary, Mrs. R. C. Pulling, J. Symonds, Peace, Red Majestic, Mrs. John Balmer, and Mrs. G. Drabble; while the DOWAGER LADY CAIN (gr. Mr. C. Moore), Wargrave Manor, Berks, in a very good second prize collection, included Viscount Chinda, Princess Mary, Louisa Pockett, and Majestic of great merit.

The exceptionally high quality was continued in the class for twelve distinct Japanese varieties, where F. C. STROOP, Esq. (gr. Mr. G. Carpenter), West Hall, Byfleet, was first with splendid blooms of such varieties as Mrs. Edwards, Mrs. R. C. Pulling, Majestic, J. Symonds and Queen Mary. Captain C. O. LIDDELL (gr. Mr. C. Jones), Shirenewton Hall, Chepstow, the second prize winner had superb specimens of Mrs. R. C. Pulling, Shirley Golden, Mrs. John Balmer and Melody. R. V. SHERWOOD, Esq. (gr. Mr. James Heath), St. Gatien House, Newmarket, was a good third. The three above-named exhibitors were placed in the same order in the class for six Japanese varieties. The first prize collection included J. Symonds, Majestic, Edith Cavell and Mrs. A. Davis of splendid quality; while Captain LIDDELL included magnificent blooms of Mrs. B. Carpenter and Lady Talbot.

The three classes for a vase of three blooms of a variety of specified colour provided excellent competition, and, incidentally, exercise for the judges. Mrs. MACDOWELL NATHAN (gr. Mr. H. Newton), Little Heath Wood, Potters Bar, was first in the "White" class with Queen Mary, and also first in the "Yellow" with Wm. Rigby. Louisa Pockett, shown by W. SHERWOOD, Esq., was the second best white variety, while F. STROOP, Esq., was first in the any other colour class with Majestic; the LORD WANDSWORTH COLLEGE was second with the same variety, and had the second best yellow with fine blooms of Mrs. R. C. Pulling.

Competition was also very good in the class for six incurved blooms in not fewer than three varieties, and all the vases were very effective. Mrs. S. W. WICKENS, Southsea, was first with delightfully formed blooms of Captain Kettle, Mrs. Percy Wiseman, and Romance, and Mrs. R. J. JOLLIFFE, Lyndhurst, was a good second.

The Holmes Memorial Challenge Cup for incurved blooms was won by LORD TERRINGTON

(gr. Mr. G. Berry), Spinfield, Marlow, whose eighteen varieties included most shapely blooms of Miss W. Southam, Romance, Mr. P. N. Wiseman and Emblem Poitevine. Mrs. R. G. JOLLIFFE was second with vases of larger but not quite so shapely blooms. LORD TERRINGTON also had the best twelve incurved blooms shown on boards, and here his best varieties were perfectly formed specimens of Mrs. P. N. Wiseman, T. W. Streater, C. H. Curtis and Mrs. G. Denyer, while, as in the former class, the second prize blooms, here shown by G. H. FISHER, Esq. (gr. Mr. T. Finch), Down View, Purley, were rather larger but not quite so well finished. Mrs. JOLLIFFE was first with six incurved varieties; she showed excellent blooms of Romance, Frank Tristan, and Ivy Gay, while LORD TERRINGTON was second.

Decorative Chrysanthemums were not extensively shown, though F. C. STROOP, Esq., won the first prize in the class for six varieties with attractive vases of Mr. E. Reeves, Mrs. W. Thorp, George Carpenter and other useful sorts.

Although J. W. HUSSEY, Esq., Matford Lodge, Exeter, was the only exhibitor of Pompon varieties, he staged excellent examples of this dainty type of Chrysanthemum. In the class for disbudded blooms he showed Wm. Kennedy, Snowball, and Princess of Orange of perfect shape, while his sprays of Wm. Sabey, Rose Marguerite, Iva and Wm. Westlake were delightful examples.

The nine vases of large Singles which won the first prize for F. J. YARROW, Esq. (gr. Mr. A. Robertson), St. John's Wood, were splendid specimens, and included Catriona, Annette, Stuart Smith and Reginald Godfrey. Captain C. O. LIDDELL, showing Susan and Catriona of perfect form, was first in the class for six Singles, while F. C. STROOP, Esq., was second in both instances. Miss N. HEDGES, Sydenham, had the best vase of small-flowered Singles. There was only one "display" of Singles and this was a particularly attractive exhibit fully warranting the first prize which was awarded. The principal varieties shown by BARON SCHRODER (gr. Mr. E. J. Henderson), The Dell, Egham, were Molly Godfrey, Phyllis Cooper, Susan, Glorious and Stuart Smith.

In the Open to All Section the George Monro Challenge Cup did not attract so large a competition as usual, but the quality of the exhibits was fully equal to that of former years. The best twelve vases of large Singles were staged by F. J. YARROW, Esq., who included beautiful blooms of Miss Joyce Moore, Audrey, Wm. Smith, and Crimson Velvet. Viscount HAMBLEDON was second with a very good collection. A. G. VINTEN, Esq., Balcombe, was first for twelve vases of Decorative Chrysanthemums; he showed Shirley Scarlet, Golden Marvel, Jean Pattison, Aldyth, Golden Glory, In Memoriam and other varieties of this useful type.

Mr. W. RUNCIMAN, Wanstead, the only exhibitor of Anemone Singles, showed lovely vases of Thora, Aphrodite and Ceres, and in his first prize six vases of large Singles had good examples of Margaret, Jessica, and Mrs. W. Smith. Captain C. O. LIDDELL, with good vases of Mr. A. Robertson and Bronze Molly, won the first prize in the class for three vases of large Singles.

FLORAL ARRANGEMENTS.

Miss N. HEDGES, Sydenham, was very successful in the Floral Decorations Classes where she won first prize for a vase of large exhibition varieties, a vase of large Singles and a beautiful basket of Chrysanthemums. The best vase of Singles in this section was shown by F. J. YARROW, Esq.

The class for an arrangement of Chrysanthemum blooms suitable for a hall table or a sideboard did not bring out any novel arrangement, the competitors relying on one large vase flanked by smaller ones. Decidedly the best was arranged by Mr. A. TICKLER, Slough, though the use of a little more foliage would have improved it, while in the second prize arrangement of Mrs. ROBINSON, Maidenhead, the foliage was an unusually prominent feature. Mr. G. RICHARDSON had very successful displays in the classes for a vase of five blooms of Japanese

varieties and a vase of Singles arranged for effect, while Mr. A. TICKLER was also first with any type of Chrysanthemum.

AMATEURS' CLASSES.

While, as we have mentioned, the exhibits of this section were not quite so numerous as might have been hoped, the general quality was very high as there were many admirable exhibits. The N.C.S. Silver Medal offered for the best exhibit in the ten classes was won by Mr. W. STANLEY, Gosport, with his splendid exhibit of twelve Japanese blooms in class forty-three.

In Section A, Mr. J. H. GODDARD won the first prizes for twelve and for six Japanese blooms with particularly good specimens. Mr. JOHN ROWLETT had the best six Incurved varieties, and Mrs. KOHNSTANN (gr. Mr. J., Clement), Middleheath, Hampstead, was first with three vases of Japanese and with six vases of single varieties. Mr. J. H. GODDARD, Leicester, showing fine blooms of Mrs. G. Drabble and Sir E. Letchworth was first in the class for six Japanese varieties in Section B, where Mrs. JOLLIFFE was first with Incurved varieties, and Mr. B. CARPENTER, Finchley, was equally successful with magnificent blooms of Victory, Majestic and Mrs. Spencer Chichester in the class for three Japanese varieties. Mr. JAMES SYMONDS, Croydon, had the best three vases of singles.

The Affiliated Societies' Trophy, which is offered for the best twelve vases of representative Chrysanthemums exhibited by the members of an affiliated society was won by the Finchley Chrysanthemum Society with a very attractive display of well-grown blooms, and the FOREST HILL HORTICULTURAL SOCIETY was awarded the second prize for a very good collection.

NON-COMPETITIVE EXHIBITS.

A group of Chrysanthemums in pots, shown by Mrs. McDOWELL NATHAN (gr. Mr. W. Newton), Little Heath Wood, Potters Bar, was composed of particularly well-grown plants bearing large blooms of such merit that the judges awarded a Gold Medal. Mrs. FOX (gr. Mr. W. McCaul), Medmenham Abbey, Bucks, sent a specimen plant of Mrs. R. Luxford, which was a perfect example, and bore sixty good sized blooms of bright colouring (Silver Medal). In the corner space by the tea annexe, Miss JOSHUA arranged for the Swanley Horticultural College a very graceful group of Chrysanthemums in relatively small pots, illustrating the value of the different types for greenhouse and conservatory decoration.

The whole of the tabling at the end of the hall was filled by Mr. H. J. JONES with a magnificent collection of cut Chrysanthemums. Most of the very many varieties of exhibition blooms were displayed in tall stands against the wall, and these made a brilliant feast of colour. His chief varieties were Mrs. R. C. Pulling, yellow; Queen Mary, white; Mr. T. W. Pockett, an immense pink sort with silvery reverse; Nan Luxford, Incurved Japanese, of charming silvery-pink colour; Sulphur Queen; Red Majestic; Norman Davis, bright mauve; and Mrs. Swaisland, bright pink. The formal but highly decorative varieties were well represented, and this type included the new Ondine, H. W. Thorpe, white, and Golden Thorpe. Of the many excellent Singles we especially noted Pink Beauty, Mrs. Palmer, white; Mrs. F. Brill, pink with a white zone; Phyllis Cooper, rich yellow; Catriona, rich old rose; Jessica, bronzy-red; Margaret Davis, ruby crimson; Gloriosa, an improved golden Mensa; and Molly Godfrey, deep pink. There were also many varieties of the useful market type of Japanese Chrysanthemums in this superb exhibit which was deservedly awarded the Large Gold Medal.

The market varieties were never better shown than on the present occasion by Messrs. CRAIG, HARRISON and CRAIG, who arranged an enormous quantity of first-class blooms with exceptional taste. The principal varieties were their new Mrs. R. F. Felton, Felicia, a lovely soft pink; T. Page, a broad-petalled, pink bloom; Aldyth, crimson; J. W. Streater, a yellow Incurved variety; Sunshine, bright

bronzy-yellow; and Enid Elder, of slightly paler tone (Gold Medal).

Immediately inside the hall, Messrs. W. WELLS and Co. filled a large space with excellent cut blooms. Their exhibition Japanese varieties included Majestic, Mrs. Algernon Davis, Mr. George Monro Junr., Mrs. Harold Wells and Mrs. B. Carpenter. Amongst the many good Singles such sorts as Liberty, Gloriosa, Phoebe, Phyllis Cooper, Audrey, Florizel, Estelle, Bertha Fairs, Caledonia, Claribel and Coronet were very prominent. Brilliant yellow colouring was provided by R. Hooper Pearson, while Captain Kettle was also very decorative.

The large Japanese varieties so well shown by Messrs. KEITH LUXFORD and Co., included T. W. Pockett, Nan Luxford, Majestic and Mrs. George Monro Junr. This valuable collection also contained many Singles of which the following is a representative selection:—Oriole, yellow; Nona, white; Everlasting, crimson; Phyllis Cooper, rich yellow; Everbright, rosy-bronze; and Ethre, golden-yellow, striped with bronzy-red (Gold Medal).

Spray-flowered varieties were extensively shown by Mr. WM. YANDELL; he set up graceful vases of Source d'Or, Market Red, Starton, Scarlet Sunshine, and many other beautiful sorts. He also had very good vases of Ceddie Mason, Nancy, Susan, and Meta amongst the Singles.

Queen of the Pinks, an Incurving variety of market size and uncommon shade of silvery-pink colour, was largely shown by Messrs. Wm. GODFREY and SON, who also had decorative vases of Dignity, Attractive, November Glow, Devonshire Cream, Gorgeous and Ruby. Mr. A. G. VINTEN displayed vases of such varieties as Shirley Scarlet, Exmouth Pink, Miranda, Raleigh and Phyllis Cooper.

HOLLAND COUNTY POTATO SHOW.

THE Holland (Lincolnshire) County Potato Show, held under the auspices of the County Agricultural Education and Horticultural Committee, took place at Spalding, on Thursday, October 29, and proved a great success.

The show, held alternatively in the north and south of the county, was this year far and away above previous shows, both as to the number of the entries and the quality of the exhibits. In some respects the season has not been a particularly good one, but in spite of this the entries numbered sixty more than last year.

The "ware" classes were very strong, also the single dish section, whilst King Edwards made the best display ever seen in a district noted for the cultivation of this tuber. "Taken as a whole, the show is getting better every year, and is without doubt the premier Potato show in England," said one of the judges.

Potato growers, dealers, buyers, and everyone of note in the Potato industry flocked to the show. Not only was the county of Lincoln well represented, but there were many strangers to the county, including many visitors from Scotland, some of whom remained in the district for the greater part of the week.

The judges were Mr. J. Edgar, of Perth; Mr. W. P. Lasham, of Reading; Mr. F. Dennis, of Kirton; and Mr. G. Major, of Holbeach. To our correspondent, the judges remarked that exhibitors were beginning to realise the importance of quality and grading; the first earlies, they said, were of better quality than the second earlies, whilst the maincrops were slightly below standard.

In the ware class, Mr. A. B. Bass, a well-known farmer in the Holbeach Marsh district, had an exceptional display of King Edward. Not only did he take two firsts and a second prize, but he also won the Boston Farmers' Union Challenge Cup, and the Holland Farmers' Union Challenge Cup.

Mr. JOHN COCK, of Weston Hills, near Spalding a notable prize winner in previous years, was most successful with his many fine exhibits, obtaining no fewer than six firsts, three seconds, and five third prizes, and in addition taking the South Lincolnshire Potato Merchants' Cup for the best trade exhibit, and also the

Gilding Bowl for the best immune variety. Mr. COCK made a display of fifty-five distinct varieties, including two or three of the latest seedlings.

Mr. J. T. WRIGHT, of Roxby, near Scunthorpe, North Lincs., won the Daniels' Cup (ware, any variety), and also the Gold Medal given by the C.W.S. for the best bag of King Edward. This exhibitor's sack of King Edward contained the prettiest Potatos in the show. Mr. WRIGHT will be remembered as the winner of the *Daily Mirror* Cup and afterwards of £80 in prize money at the Crystal Palace a couple of years ago.

The best single dish of Potatos was shown by Mr. Cecil Robinson, of Quadring, in the south of the county, the variety being Majestic, and he was awarded a Gold Medal.

The Cup for first-early seed Potatos went to Mr. WILLIAM GILDING, J.P., of Swineshead, near Boston, chairman of the show committee; and the Cup for seed of any variety was won by Mr. W. H. SMITH, of Swineshead, another well-known grower.

The Robinson Bowl for ware, any variety, confined to small-holders, was awarded to Mr. B. BAXTER, of Spalding.

There was a large and influential gathering, both at the public luncheon in the Exchange Hall, and also at the opening of the show, which took place in a large garage. Lord Brownlow, a popular Lincolnshire landowner, performed the opening ceremony, and was also the principal speaker at the luncheon, where he advocated legislation to protect the Potato industry, this to be either by import licences for foreign Potatos or some other means.

Personally, he did not believe in subsidies, regarding it as a wrong thing to pay the taxpayers' money to any industry. The Member for the Holland Division of Lincs. (Mr. A. W. Dean) advocated the passing of a Bill giving to the Minister of Transport some control over railway deliveries, in order to obviate the costly delays to perishable produce, which he said had again been experienced during the summer of this year. Others present included Sir John Green, Mr. H. Haslam, M.P., for the Horncastle Division of Lincs.; Sir Ernest Shentall, M. Councillor J. W. Glead, M.A., J.P., chairman of the Holland County Council; Mr. Councillor E. J. Deal, chairman of the Holland County Agricultural Committee; Alderman F. E. Bowser, representing the Boston and District Farmers' Union; Alderman H. P. Carter, chairman of the Holland Farmers' Union; Mr. Councillor William Gilding, J.P., chairman of the show committee, and Captain J. C. Wallace, secretary and treasurer to the show.

TAUNTON CHRYSANTHEMUM.

THE County Territorial Hall, Taunton, was filled on the 5th inst., with a magnificent display of Chrysanthemums on the occasion of the annual show of the Taunton and District Chrysanthemum and Fruit Society. This was the eleventh annual exhibition, and it easily eclipsed its predecessors in size and beauty. Excellent arrangements were made by the committee and hon. secretary, Mr. W. H. Loosemore. There was a record entry of over 600, and very keen competition resulted in each division. The quality in the open classes for cut blooms was especially high, and there were many notable exhibits in the fruit section, in which there were 232 entries of Apples alone. Cox's Orange Pippin formed the strongest class with no fewer than thirty-three entries.

The Gold Medal offered for the best Japanese Chrysanthemum bloom in the show was won by the LADY ABBESS, Franciscan Convent, Taunton (gr. Mr. P. Fawle), for a singularly beautiful bloom of the pale yellow Princess Mary variety, very similar to that which obtained the Medal last year for the same exhibitor. Major F. J. WINGFIELD-DIGBY, D.S.O., of Sherborne Castle (gr. Mr. Edwin Hill), won the ex-president's Silver Challenge Cup in the class for thirty-six cut blooms (Japanese), beating Messrs. WEBBER and SONS, Minehead, who obtained the Cup last year. Messrs. WEBBER, however, won the present Mayor's Challenge Cup for the best

exhibit in the class for twenty-four cut blooms. A similar trophy, given by the president of the show, Col. A. Hamilton Gault, M.P., of Hatch Court, was won by Mr. GUY TURNER, of Staple-grove Manor, Taunton (gr. Mr. John Nation), for a group of Chrysanthemum plants in pots, while a Gold Medal for the best decorated table was awarded to Miss E. B. ELLIS, Taunton.

In the Amateurs' Division, Mr. C. E. O. HEMMEL, of Langport, won for the second time and outright the Silver Challenge Cup given by the ex-mayor of Taunton for the highest number of points obtained in this division, also a Silver Vase for the best twelve cut blooms. A Gold Medal offered for the best bloom in the cottagers' division was awarded to Mr. J. G. HOARE, Taunton, and a similar Special Prize for the best collection of vegetables shown by an allotment holder was awarded to Mr. W. HUBBARD, North Petherton.

The principal awards in the open classes were as follow:—

Japanese Chrysanthemums, thirty-six blooms, distinct, first, Major WINGFIELD-DIGBY; second, Messrs. JAMES WEBBER AND SONS, third, the LADY ABBESS, Taunton. For twenty-four blooms of Japanese Chrysanthemums: first, Messrs. JAMES WEBBER AND SONS; second, Mr. C. A. GUY TURNER; third, the LADY ABBESS.

For twelve blooms, distinct, Col. W. BARRETT, North Curry, excelled; second, Messrs. J. WEBBER AND SONS; third, the LADY ABBESS, who excelled in the class for four vases of blooms; second, Messrs. J. WEBBER AND SONS. Major WINGFIELD-DIGBY showed the best vase of a white variety; second, Brig.-Gen. LOCK, West Monkton. Messrs. J. WEBBER AND SONS showed the best vase of a yellow variety, and Mr. L. C. VAUGHAN, Barton Grange, had the best five blooms, distinct. Single Chrysanthemums in twelve vases were best shown by Mr. C. A. GUY TURNER; second, the LADY ABBESS. For six vases, Mr. G. F. LUTHELL excelled, while the first prize for four vases was awarded to Messrs. JAMES WEBBER AND SONS. This firm excelled in the class for one vase of Carnations, in which Sir DENNIS BOLES, Bart., Watts House, was second.

GROUPS AND PLANTS.

The finest display of cut Chrysanthemums and foliage plants was made by Mr. A. J. GROVES; second, Mr. G. N. FARRANT, Bishop's Hall, Taunton. For a group of Japanese Chrysanthemums in pots, Mr. C. A. GUY TURNER was placed first and the LADY ABBESS second. For a group of Single Chrysanthemums Sir DENNIS BOLES was the first prize winner, followed by REV. PREB. CORFIELD. In six classes for specimen plants (Chrysanthemums), Dahlias and Begonias Mr. GUY TURNER won all the first prizes. Mr. G. N. FARRANT was placed first for Zonal Pelargoniums, and Sir DENNIS BOLES excelled in the class for four Cyclamen plants. The principal prize winners for fruit were Sir ROBERT HAMILTON, M.P., Ford Lodge, Wiveliscombe, Mr. GUY TURNER, Mr. J. RISDON, Wiveliscombe; Mr. W. H. BAILEY, Taunton; Messrs. J. WEBBER AND SONS; Mrs. HALL, Cricket St. Thomas; and Sir DENNIS BOLES. The last-named was also awarded a Silver Medal of Merit for a non-competitive collection of Apples.

The following awards were made to non-competitive displays.—

A large Gold Medal to Mr. H. CLARKE, Taunton, Gold Medals to Mr. R. J. CASE, Staple-grove, and Mr. H. WOOLMAN, Shirley, Birmingham. Silver Medals to Messrs. JARMAN AND CO., Chard, for an exhibit of Apples and Chrysanthemums; and to Mr. J. C. CURTIS, Burnham-on-Sea, for Onions.

BRITISH FLORISTS' FEDERATION.

THE Market Floral Committee of the British Florists' Federation met at Messrs. Monro's Saleroom on October 5 and made the following award.

FIRST CLASS CERTIFICATE.

Chrysanthemum Mayford White.—A graceful reflexing Japanese variety of suitable market

size, with pure white flowers carried on stiff, slender stems. Shown by Mr. H. SHOESMITH, Junr., Mayford, Woking.

At the meeting held on November 2, only one award was made, as follows:

FIRST-CLASS CERTIFICATE.

Chrysanthemum Mrs. R. P. Felton.—This is a very fine market variety of the Almirante type, with handsome blooms of attractive reddish-crimson shade. The flowers are of good size, carry well and do not fade to a dingy colour with age, and they are carried erect on stiff stems. Shown by Messrs. CRAGG, HARRISON AND CRAGG, Heston, Hounslow.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL.

THE annual meeting of the members of the above Society was held on the 4th inst., in the Christian Institute, Glasgow. Mr. T. B. Kerr, Chairman of Directors, presided over a large attendance. The financial report for the past year showed a decline in revenue owing to a large decrease in the membership consequent on the annual show being abandoned as a result of Kelvin Hall being destroyed by fire, the credit balance being only £2 13s. 6d.

Sir John Reid was re-elected president. The retiring twelve directors were re-appointed with the exception of the vice-chairman, Mr. E. Matthews, director of Glasgow Parks, who was defeated by Mr. James Cunningham. Duntreth Castle, Blane-feld, by the narrow majority of five votes.

A discussion took place regarding the possibility of holding a flower show in 1926. As the new Kelvin Hall will not be ready for occupation in September, Mr. D. Buchanan, Kippin, suggested that an exhibition restricted to competitive classes be held in St. Andrew's Hall, and it was ultimately agreed to leave the arrangements to the directors, who are to submit a report to the next monthly meeting. The Secretary explained that the exhibits at the Kelvin Hall show occupied three acres, and in response to enquiries respecting the cost of canvas, it was ascertained that the Chelsea show, which covered two acres, cost the R.H.S. £1,750 for the hire of marquees, while the Southport show, covering an area of one-and-a-half acres, necessitated an expenditure of £850.

ROYAL HORTICULTURAL.

THE following Awards have been made to Dahlias by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

(Single Type "B"). *Aimee Barillet*, sent by E. A. BOWLES, Esq., Waltham Cross.

(Collerette). *Lady le Bas*, sent by Messrs. J. CHEAL AND SONS, Crawley.

(Paeony). *Mrs. Skerrington*, sent by Mr. A. J. COBB, University College, Reading; *Lady Heath*, sent by Messrs. J. CHEAL AND SONS, and *Flame*, sent by Messrs. J. BURRELL AND CO., Cambridge.

(Small-flowered Paeony). *Lucina*, sent by Messrs. J. BURRELL AND CO.; *Mrs. A. Gordon*, sent by Messrs. J. CHEAL AND SONS; *Molly*, sent by Messrs. J. BURRELL AND CO.; *Atalanta*, sent by Mr. T. TURNER, Slough; *Mary Poynter*, sent by Mr. W. TRESEDER, Cardiff; *Glamour*, sent by Messrs. J. BURRELL AND CO.; *St. Davids*, sent by Mr. A. J. COBB; *Nigra*, sent by Mr. A. J. COBB; *Mary*, sent by Messrs. J. BURRELL AND CO.; and *Cathe*, sent by Messrs. J. BURRELL AND CO.

(Decorative). *Nervous Enschedi Kooy*, sent by Mr. H. CARLEE, Heemstede; *Prestige*, sent by Messrs. J. STREDWICK AND SON, St. Leonards; *Emma Groot*, sent by Messrs. J. G. BALLEGO AND SONS, Leiden; *Uncle Dick*, sent by Messrs. J. STREDWICK AND SON; *Jean*, sent by Messrs. J. BURRELL AND CO.; *Reginald Godfrey*, sent by Messrs. GODFREY AND SONS, Exmouth; and *Border Perfection*, sent by Mr. D. BRUIDEGOM, Baarn.

(Small-flowered Decorative). *Persis*, sent

by Messrs. J. BURRELL AND CO.; *Freda*, sent by Messrs. J. BURRELL AND CO.; and *May*, sent by Mr. W. TRESEDER.

(Camellia). *Ulich*, sent by Messrs. J. CHEAL AND SONS.

(Star). *Crimson Star*, sent by Messrs. J. CHEAL AND SONS.

(Cactus). *Mrs. Lowes*, sent by Messrs. J. CHEAL AND SONS; *Berengaria*, sent by J. STREDWICK AND SON; and *Princess Louise*, sent by Messrs. J. STREDWICK AND SON.

HIGHLY COMMENDED.

(Paeony). *Mrs. W. R. Dykes*, sent by Messrs. J. CHEAL AND SONS.

(Small-flowered Paeony). *Muriel*, sent by Messrs. J. BURRELL AND CO.; *Harriet*, sent by Messrs. J. BURRELL AND CO.; *Wessex*, sent by Mr. A. J. COBB; and *Tansy*, sent by Messrs. J. BURRELL AND CO.

(Decorative). *Sheila Ward*, sent by Messrs. J. STREDWICK AND SON.

(Star). *Highmead Star*, sent by Messrs. J. CHEAL AND SONS; *Charlwood Star*, sent by Messrs. J. CHEAL AND SONS; *Shinfield Star*, sent by Mr. A. J. COBB.

(Cactus). **Acme*, sent by Mr. H. SHOESMITH, Junr., Woking.

* Award recommended September 28, 1925.

The following Awards have been made to Gooseberries by the Royal Horticultural Society, after trial at Wisley.

FIRST-CLASS CERTIFICATES.

Lancer, sent by Messrs. COUSENS, Swanwick, Southampton; and *Bedford Yellow*, sent by Messrs. LAXTON BROS., Bedford.

AWARDS OF MERIT.

Green Gem†, sent by Messrs. LAXTON BROS.; *Langley Gage†*, sent by Messrs. COUSENS; and *Rifleman*, sent by Messrs. T. RIVERS AND SONS, Sawbridgeworth; *Cousens' Seedling*, sent by Messrs. COUSENS, and Messrs. J. R. PEARSON AND SONS, Lowdham, Notts.

† For private gardens.

HIGHLY COMMENDED.

Whinham's Industry, sent by Messrs. COUSENS; *Bedford Red*, sent by Messrs. LAXTON BROS.; *Warrington*, sent by Messrs. COUSENS; and *Hebburn's Green Prolific*, sent by Mr. G. TAYLOR, Messrs. DOBBIE AND CO., Edinburgh.

COMMENDED.

Victoria, *Broom Girl* and *Whitesmith*, these three sent by Messrs. J. R. PEARSON AND SONS; *Ajax*, sent by Messrs. LAXTON BROS.

READING AND DISTRICT GARDENERS'.

NOTWITHSTANDING the inclement weather, there was a very large attendance of members at the fortnightly meeting held at the Abbey Hall, on Monday the 2nd inst., the president, Mr. Frank E. Moring, in the chair.

The subject for discussion was "Vegetables for Exhibition," and this was introduced by Mr. J. Moffatt, Greenlands Gardens, Henley-on-Thames. Mr. Moffatt gave exceedingly useful details of the methods carried out at Greenlands to obtain the finest exhibition vegetables, and the methods practised have proved successful by the fact that many prizes have been carried off by Mr. W. Turnham, the head gardener, at the leading shows throughout the country. The principal kinds touched upon were Carrots, Parsnips and Beet, Potatoes, Peas, Onions, Leeks and Celery. A discussion of about an hour's duration followed.

Competitions were arranged for a collection of vegetables and many fine specimens were shown. In Class 1, open to all, for six distinct kinds, there was only one entry, viz., Mr. J. WYNN, Hammond's Gardens, Checkendon, who staged extra fine Celery, Cauliflower, Leeks, Onions, etc. In a class for those not having more than one assistant, for four distinct kinds, there were five entries, and the first prize was won by Mr. F. HAINES, Calcot Hanger Gardens; the second by Mr. J. HUNT, Calcot Place Gardens, and the third by Mr. R. HAINES, Calcot. In Class 3, for amateurs and allotment

holders, there were four exhibits, and the first prize was awarded to Mr. R. BULLER. In the non-competitive section, Mr. A. W. GOWER, The Gardens, Calcot Grange, staged a collection of fruit consisting of twelve dishes of Apples and one of Pears, all in the finest condition.

MARLOW AND DISTRICT CHRYSANTHEMUM.

NOVEMBER 4.—The committee of this Society has every reason to be satisfied with its fourth annual show, for, while the exigencies of space made it necessary to abandon the trade class, the hall was filled with very meritorious exhibits, and there was a good attendance.

In the open class the best eight vases of specimen Japanese blooms were shown by A. G. BENDIX, Esq. (gr. Mr. G. Clarke), Medmenham Abbey, who had excellent blooms of Mrs. Algernon Davis, Mrs. George Monro, Majestic, Mrs. Spencer Chichester, and Frances Jolliffe. Mrs. A. HORNBY-LEWIS (gr. Mr. A. E. Friend), Danesfield Park, Marlow, was a good second. The other class in the open division was for three Japanese blooms, any variety, for which Lord TERRINGTON (gr. Mr. E. Berry), Spinfield, Marlow, was first with a vase of superb specimens of Mrs. R. C. Pulling, and Mrs. HORNBY-LEWIS was a close second with Rosamund.

The local classes are open only to members living within a radius of eight miles from the Market Square. There were two groups of Chrysanthemum plants, and the first prize was won by Mrs. Fox (gr. Mr. W. McCaul), Melmouth Lodge, Cookham, who showed exceptionally dwarf plants bearing large blooms, and arranged with remarkable precision.

The class for a display of Chrysanthemums brought three well-arranged collections, and the first prize was won by Lord TERRINGTON with a charming arrangement of sprays and specimen blooms which well represented the different types of the Chrysanthemum and their great decorative value. Mrs. HORNBY-LEWIS was second in this popular class.

Showing excellent blooms of Majestic and William Turner, Lord TERRINGTON was the first prize winner in the class for three blooms each of two varieties, and with perfectly shaped specimens of Mrs. P. N. Wiseman, was equally successful in the class for a vase of any incurved variety.

Chrysanthemums shown on boards, in the principal classes, were also of high quality. The best twelve distinct Japanese varieties were shown by Mr. A. HORNBY-LEWIS, whose very good collection included Majestic, Mrs. M. Sargent, Mrs. George Monro, Mrs. R. C. Pulling and Mrs. B. Carpenter. Mr. A. G. BENDIX, who was second, had splendid blooms of Edith Cavell and of Mrs. George Monro.

The first prize six Japanese varieties shown by Lord TERRINGTON, were very good indeed, and included magnificent specimens of Frances Jolliffe, Mrs. R. C. Pulling, Mrs. B. Carpenter and Louisa Pockett. The last-named variety was awarded the N.C.S. Medal offered for the best bloom in the show.

The class for six vases of Singles was keenly contested, and it was only after pointing the vases that the judges awarded the first prize to Mrs. HORNBY-LEWIS, and the second to Mr. A. G. BENDIX. The principal varieties in the winning collection were Portia, Mrs. W. F. Smith, Phyllis Cooper, Bronze Molly, and Supreme. Mr. BENDIX had splendid vases of Bronze Molly and Mrs. W. F. Smith.

Captain H. B. Wright's Cup, which was offered for competition amongst amateurs who do not employ paid assistance for more than two days a week, was won by Mr. C. H. YATES, Cromwell Gardens, with six most creditable Japanese blooms.

But, good as were the cut blooms, the outstanding feature of the show was the specimen plant of Mrs. R. Luxford, which was shown by Mrs. Fox, Melmouth Lodge, Cookham, in class 29. This was a perfectly grown plant, bearing plenty of healthy, dark green foliage, and ninety beautiful flowers. Another specimen of the same variety and from the same gardens carried sixty good blooms.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT.

LORD BESSBOROUGH occupied the chair on the occasion of the annual dinner of members and friends of the Society, held at the Imperial Hotel, Russell Square, London, on November 5. He was supported by Sir William and Lady Lawrence, Mr. Gerald Loder, Mr. and Mrs. L. R. Russell, Mr. and Mrs. A. Bedford, Mr. and Mrs. A. Osborn, Mr. and Miss C. H. Curtis, Mr. and Mrs. J. B. Linford, Mr. M. C. Allwood, Mr. and Mrs. Edwards, Mr. and Mrs. A. C. Hill, Mr. and Mrs. Brown, Mr. Frank Reader, Mr. and Mrs. G. H. Barr, Mr. Butler, Mr. Craik, Mr. Wesker, Mr. and Mrs. W. Russell, and others.

The toast of "The King" having been duly honoured, Lord Bessborough proposed "Continued Success to the Horticultural Benefit and Provident Society," and observed that it was somewhat unusual nowadays to attend a dinner without being appealed to for a donation or subscription, but he was assured that the United Horticultural Benefit and Provident Society was not in need of money and was in no sense a charity. It had ample invested funds and its members were dealt with as liberally as regulations permitted. The Society had reached its diamond jubilee; it had carried out and continued to work, a great scheme of self-help. The need of the moment was young men to join the Society, and subsequently fill the places of those who had been for many years concerned in its management. Gardening was the oldest of occupations, and gardeners of to-day had a great duty to fulfil in keeping the country beautiful and winning crops from the soil. Employers had also a duty towards their employees, and he urged they should place before the members of their garden staffs the benefits to be derived from membership of the United Horticultural Benefit and Provident Society.

In responding to this toast Mr. Chas. H. Curtis, chairman of committee, expressed the pleasure all felt in having Lord Bessborough as chairman that evening. In support of Lord Bessborough's observations concerning the stability and usefulness of the Society, Mr. Curtis stated that since its institution, sixty years ago, a sum of £17,118 had been paid out in sick pay; members had been relieved from the Distress Fund to the extent of £6,003, and nominees of deceased members had received £8,557. One member who had been ill for long periods received £300 in sick pay, and now, being over seventy years of age and in distressed circumstances, he had been granted 5/- per week for the remainder of his life. On the State side of the Society's work, £6,714 had been disbursed in sick pay since 1913, while grants in aid for dental, optical and surgical treatment came to £765. At a recent valuation of the State Section a surplus of £8,298 was shown, and of this sum it was decided to set apart £5,348 for increased benefits, such as an additional 5/- per week during sickness, an extra 2/6 per week during disablement, and larger grants, up to £7 10s., towards the costs of dental, optical and surgical treatment. Economical management and the general good health and honour of the members combined to ensure the stability of the Society—which now had £70,000 invested—and permit the granting of additional benefits as already stated.

Mr. Gunner, an old friend and auditor of the Society, proposed "The Visitors," and urged those who had enjoyed a pleasant evening to do a little missionary work on behalf of the Society, and make an effort to secure new, young members. Mr. Montagu C. Allwood, in response, said he was amazed at the wonderful position of the Society and its great usefulness. He confessed that although he had known the Society and most of its officers for many years, he had not fully understood its great value to the gardening community. Mr. Curtis's recital of figures sounded like a fairy tale, but it was obvious the Society had conferred great benefits upon its members. He was pleased to be present, and he would place the advantages of membership before his staff at Haywards Heath.

Sir William Lawrence proposed Lord Bess-

borough's health, and took advantage of the occasion to tell one or two humorous horticultural stories. In reply, Lord Bessborough said it had given him great pleasure to be present, and he neither needed nor desired any thanks for presiding. He thanked the artistes who, under the direction of Mr. George Duncan, had provided an excellent musical programme; and those who had given and arranged the flowers. He concluded by putting a motion for which he said he would require no seconder, and on which he would allow no discussion, "That everyone present pledges himself to secure at least one new member before the next annual dinner." Carried unanimously.

THE monthly meeting of this Society was held in the R.H.S. Hall on Monday, November 9, Mr. Charles H. Curtis presiding. Eleven new members were elected. One member withdrew interest amounting to £3 6s. 10d., and another member who had reached the age of seventy years withdrew £141 17s. 0d., still leaving £10 to his credit. Three other members withdrew a total of £97 18s. 9d., and the sum of £59 17s. 11d. was passed to the nominees of two deceased members. The sick pay on the ordinary side amounted to £95 16s. 1d., and on the State side to £84 1s. 2d. The Trustees were instructed to invest a further £1,000.

Obituary.

Henry Charman.—We regret to learn of the death of Mr. Henry Charman, many years gardener to Sir Philip Sassoon, at Port Lympne, near Hythe, Kent. Mr. Charman was a very capable gardener and administrator, and well-known in the gardening profession, especially in the south of England. His death occurred suddenly on Thursday, November 5.

John Heal, V.M.H.—It is with very real and deep regret we record the death of Mr. John Heal, which occurred early on Friday, the 6th inst., at his residence, 10, Musgrave Crescent, Fulham. The death of Mr. John Heal removes from the ranks of horticulture another of those eminent gardeners famous in a past generation. Born in Devonshire, and very proud of his home county, Mr. Heal had comparatively few opportunities in his earlier years, and at a very early age he commenced his horticultural career at the Westacott Nurseries, near Barnstaple, North Devon. Here he served an apprenticeship of four years, and in 1863 he applied for a position as improver in the glass department of Messrs. James Veitch and Sons' nursery at Exeter. After an interview, Mr. James Veitch, grandfather of the late Sir Harry Veitch, recommended Heal to his son, Mr. James Veitch, of Chelsea, who engaged him as an improver at his Coombe Wood nursery. After two years at Coombe Wood, Mr. Heal was transferred to the Chelsea nursery where he gradually acquired that success and fame which placed him in the forefront of raisers and cultivators. For rather more than half-a-century he served the firm of Messrs. James Veitch and Sons, and his connection concluded only with the cessation of the firm in 1914. The horticultural achievements of Mr. Heal have been set forth on many occasions in these pages and in the issue of *The Gardeners' Chronicle* for October 22, 1921, an appreciation of his work, together with his portrait, was published. When in charge of the New Plant Department at Chelsea, John Heal was a kindly martinet; enthusiastic and painstaking himself, he did not tolerate slackness in others. Many men now occupying good positions in the horticultural world remember with thankfulness the "wiggings" received from him. He desired to cultivate good men as earnestly as he strove to raise and grow good plants, and in both he was successful. Many a young man who received the full measure of his scornful rebuke will remember how—later and so soon as repentance was shown—it was followed by a fatherly talk that healed the smart, stirred enthusiasm, and created a desire to do one's best. He loved his work, he loved the plants he raised, he loved

and was very proud of the young men who passed from his care to fill good positions, and he had a staunch loyalty and affection for the firm he served so long and faithfully. The decision of Sir Harry Veitch to close down the Chelsea business was a great blow to Mr. Heal, and not less seriously did he feel the loss caused by the death of Sir Harry, who was his friend as well as his employer. A few of Mr. Heal's outstanding achievements include the raising of a fine series of hybrid Rhododendrons by using *R. javanicum*, *R. Teysmannii*, *R. multicolor* and *R. multicolor Curtisii* as parents; the improvement of Streptocarpuses, indeed the creation of the garden races of those plants; the production of large numbers of splendid Hippeastrums; the creation of a race of winter-flowering Begonias by crossing tuberous-rooted varieties with *B. socotrana*; and the raising of a splendid series of Phyllocacti. His modesty, loyalty, determination, large-heartedness, and indeed, his occasional brusqueness, endeared him to all who became at any time associated with him. Few men were more widely known in their profession than Mr. Heal; few so widely respected and esteemed. In recognition of his services as a plant raiser, the Royal Horticultural Society awarded him the Victoria Medal of Honour in Horticulture when this award was founded in 1897. Another honour he greatly prized was the Veitch Memorial Medal. The funeral service was held at St. James' Church, Moor Park Road, Fulham, on Wednesday last, and the interment took place at Fulham Old Cemetery. To the widow, his two sons and daughter we offer our deepest sympathy in the great loss they have sustained in the death of this great horticulturist who had exceeded the allotted span of life by about fourteen years, and had been in failing health for some time past.

Theodor C. Jannoch.—The death of this well-known horticulturist occurred at Dersingham Hall, King's Lynn, on the 12th inst. Mr. Jannoch was one of the pioneers of the cultivation of Lily-of-the-Valley crowns for forcing in this country, and at Dersingham he built up an extensive business in these plants, as well as in Lilacs for forcing, and Cyclamens, for all of which plants he won many awards. He was born in Germany in 1850, but came to England before the Franco-German war, his first appointment being in the Royal Gardens at Sandringham, and subsequently he entered Kew Gardens as a young gardener. After gaining further experience in Russia and in different parts of England, he purchased an acre or so of land at Dersingham for the purpose of starting a nursery. Here, as stated above, he specialised in the forcing of Lily-of-the-Valley plants, based on experience gained as a youth in Germany, and it is said that his annual output often exceeded one million crowns. He became so successful that he was able to purchase Dersingham Hall and the estate, which adjoins Sandringham. He was one of the first growers in this country to employ etherisation in the forcing of plants. The late King Edward, when Prince of Wales, took an active interest in Mr. Jannoch's experiments, and was a frequent visitor to his nurseries at Dersingham.

James William Seden.—We record with regret the death, on November 3, after three months' painful illness, of James William Seden, aged 49 years. He was the son of the late John Seden, V.M.H., for many years an employee of Messrs. J. Veitch and Sons. Deceased was gardener at West Grinstead Park for more than twenty years, first to J. Rolls Hoare, Esq., and latterly to J. P. Hornung, Esq. Previous to his engagement at West Grinstead Park, he was for three years foreman to His Grace the Duke of Richmond, at Goodwood House; he was also for two years in the service of Sir Joseph Pease, Hutton Hall, Yorkshire; for two years with Baron Schröder, at the Dell, Englefield Green, and for three years with C. J. Lucas, Esq., at Warnham Court. His remains were laid to rest in the quiet, little churchyard of West Grinstead on the 7th inst. He leaves a widow to mourn his loss.

MARKETS.

COVENT GARDEN, Tuesday, November 10th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated)

	s. d. s. d.		s. d. s. d.
<i>Adiantum cuneatum</i> , per doz.	10 0-13 0	<i>Erica gracilis</i> , 48's per doz.	24 0-30 0
—elegans ...	10 0-12 0	—nivalis, 48's per doz.	24 0-36 0
<i>Aralia Sieboldii</i> ...	9 0-10 0		
<i>Arancarias</i> , per doz.	30 0-42 0	Above varieties in 60's, per doz.	12 0-15 0
<i>Asparagus plumosus</i> ...	12 0-18 0	—In Thumbs, per doz.	9 0-10 0
—Sprengeri ...	12 0-18 0	<i>Marguerites</i> , 48's per doz.	15 0-18 0
<i>Aspidistra</i> , green 36 0-60 0		<i>Nephrolepis</i> in variety ...	12 0-18 0
<i>Asplenium</i> , per doz.	12 0-18 0	—32's ...	24 0-36 0
—32's ...	24 0-30 0	<i>Palms</i> , <i>Kentia</i> ...	80 0-48 0
—aldus ...	12 0-15 0	—60's ...	15 0-18 0
<i>Cacti</i> , per tray, 12's, 15's ...	5 0-7 0	<i>Pteris</i> , in variety 10 0-15 0	
<i>Chrysanthemums</i> , pot grown, in variety, 48's per doz.	15 0-24 0	—large 60's ...	5 0-6 0
<i>Crotons</i> , per doz. 30 0-45 0		—small ...	4 0-5 0
<i>Cyclamens</i> , 48's, in variety, per doz. 24 0-30 0		—72's per tray of 15's ...	2 6-3 0
<i>Cytisium</i> ...	10 0-25 0	<i>Solanums</i> , 48's per doz.	12 0-15 0

Cut Flowers, etc.; Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
<i>Adiantum decorum</i> , doz. bun.	9 0-10 0	French Flowers	
—cuneatum, per doz. bun.	6 0-8 0	<i>Narcissus</i> , <i>Soliel d'Or</i> , per doz. bun.	4 0-5 0
<i>Arums</i> (<i>Richardias</i>), per doz.	5 0-7 0	<i>Parma Violets</i> , per bun.	3 0 3 6
<i>Asparagus plumosus</i> , per bun.	2 0-3 0	Chillies, red and yellow, per pad.	5 0 6 0
long trails, 6's	1 6-2 6	<i>Solanum berries</i> , per pad ...	10 0-12 0
med. sprays ...	0 9-1 3	<i>Gardenias</i> , per box, 12's, 18's...	6 0-9 0
short ...	0 1-2 0	<i>Heather</i> , white, per doz. bun...	10 0-12 0
—Sprengeri, per bun.	1 6-2 0	pink, per doz. bun.	9 0-12 0
long sprays ...	1 0-1 6	<i>Honesty</i> , per doz. bun.	18 0-30 0
med. " ...	0 4-1 0	<i>Lilac</i> White, per doz. sprays ...	8 0 9 0
<i>Bouvardia</i> , white, per doz. bun.	12 0-15 0	<i>Lilium longiflorum</i> long, per doz.	4 0-5 0
<i>Camellias</i> , white, per box, 12's ...	2 6-3 0	—speciosum, album, long, per doz.	3 6-4 0
<i>Carnations</i> , per doz. blooms ...	3 0-4 6	—short, per doz.	— 4 0
<i>Chrysanthemums</i> white, large blooms, per doz.	5 0-6 0	—speciosum, rubrum, long, per doz. blooms	3 0-3 6
—yellow, large blooms, per doz.	5 0-6 0	—short " ...	2 0-2 6
—pink, large blooms, per doz.	5 0-6 0	<i>Lily-of-the-Valley</i> , per doz. bun...	24 0-36 0
—bronze, large blooms, per doz.	4 0-5 0	<i>Orchids</i> , per doz.	
above colours—		—Cattleyas ...	38 0-48 0
—medium blooms, per doz.	2 6-3 6	—Cypripediums ...	5 0-7 0
—white spray per doz. bun.	15 0-18 0	<i>Roses</i> , per doz. blooms, Richmond ...	4 0-6 0
—yellow, spray, per doz. bun.	8 0-12 0	—Liberty ...	4 0-6 0
—pink spray, per doz. bun.	9 0-12 0	—Madame Butterfly ...	4 0-7 0
—bronze spray, per doz. bun.	9 0-12 0	—Mme. ...	3 6-4 6
<i>Croton leaves</i> per doz. ...	0 9-2 6	—Chatenay ...	4 0-6 0
<i>Fern</i> , French, per doz. bun.	10 0-12 0	—Melody ...	3 0-4 6
French Flowers—		—Molly Sharnan Crawford ...	3 0-4 6
— <i>Aracia</i> (<i>Mimosa</i>), per doz. bun.	12 0-15 0	—Ophelia ...	4 0-6 0
— <i>Marguerites</i> , yellow, per doz. bun.	2 6-3 0	—Sunburst ...	4 0-5 0
— <i>Narcissus</i> , Paper White, per doz. bun.	3 0-4 0	<i>Smilax</i> , per doz. trails ...	3 0-3 6
		<i>Violets</i> ...	2 6-5 0

REMARKS.—After a very disappointing week in this department, especially for coloured Chrysanthemums, the general conditions are more encouraging this morning. All grades of the flower are realising better prices. Liliums and other white blooms are in demand for Armistice Day. Amongst Chrysanthemums, Singles are now receiving more attention owing to their very fine quality, more especially the disbudded blooms, which include *Cedric Mason*, *Exmouth Pink*, *Florence King*, *Mensa*, *John Blyth* and *Phyllis Cooper*. In addition to these there is a good selection of spray varieties in bunches, including white sorts. Roses are gradually becoming fewer and prices for best quality blooms may advance considerably before the end of this week. Orchids are more plentiful and include *Cattleyas* and *Oncidiums*, but the consignments are very irregular. The first consignment of White Lilac has been received in good condition, also some St. Brigid Anemones from Cornwall. Increased supplies of French flowers are arriving almost daily. Anemones and Paper White Narcissus are coming in much better condition. The newest subjects from this source are Frau Karl Druschki and Safrano Roses.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
<i>Batavia</i> ...	2 0-2 6	<i>Onions</i> —	
<i>Beans</i> —		—Dutch ...	6 0-7 0
—Forced, per lb.	1 0 2 0	—English, per cwt.	8 0-9 0
<i>Beets</i> , per cwt.	6 0-8 0	—Valencia ...	8 0-10 0
<i>Cabbage</i> , per tally	7 0-12 6	<i>Parsnips</i> , per cwt.	6 0-7 0
<i>Celery</i> , per doz. fans ...	16 0-24 0	<i>Potatoes</i> —	
<i>Cauliflowers</i> , per doz.	2 0-4 0	—King Edward, per cwt.	5 0-7 6
<i>Carrots</i> , per bag	6 0-7 0	—others ...	4 0-5 0
<i>Chicory</i> , Belgian per lb.	0 31-0 4	<i>Sprouts</i> , per ½ bag	3 0-4 6
<i>Cucumbers</i> , per doz.	8 0 10 0	<i>Savoy</i> , per doz.	1 9-2 6
<i>Dutch Onions</i> ...	8 0-9 0	<i>Tomatoes</i> , English, per strike—	
<i>Endive</i> , per doz.	1 6-2 6	—pink, new crop	7 6-11 0
<i>Horseradish</i> , per bundle ...	1 9-2 6	—pink, old crop ...	3 0-6 0
<i>Lettuce</i> , Cos, doz.	1 6-1 9	—blue ...	2 6-7 6
—cabbage ...	1 0-1 9	—Guernsey ...	3 0-6 0
<i>Mushrooms</i> , cups	2 6-3 6	—Jersey ...	2 6-4 0
—Broilers ...	2 0-2 6	—Dutch ...	2 0-3 0
—"Field" ...	1 0-2 0	—Canary Island, 20 0-23 0	
		<i>Turnips</i> , per cwt.	5 0-5 6

REMARKS.—Some slight improvement is reported from most sections and top grade fruits of most sorts are meeting a better demand. English Apples have not been quite so plentiful, and first-grade dessert varieties and large cookers are selling a shade better. Consignments of Apples from abroad continue to be heavy, and their values are inclined to be easier. Pears from California and the United States are plentiful, and generally, in good condition. Canary Bananas are quoted at a better level. Tomatoes from the same source are a firm trade, supplies of home-grown Tomatoes not being plentiful. Cucumbers are scarce and dear. Hot-house Beans are a firm trade, prices showing some increase. New Potatoes are more plentiful and their prices are easier. Beans from Madeira are also making higher prices. Mushrooms are a smaller supply and quoted higher. Sprouts and other green vegetables are slightly dearer. Salads are enquired for. The Potato trade is steady, with ample supplies on offer.

GLASGOW.

THE cut flower market was quieter during the past week, and as supplies were very plentiful prices moved in a downward direction except in the case of Roses, which continued firm at 4/- to 5/6 per dozen for *Opelia* and *Madame Butterfly*, 2/6 to 3/6 for *Richmond* and *Mrs. H. Stevens*, and 3/- to 4/6 for *Madame Abel Chatenay*. As usual at this season, Chrysanthemums constituted the greater part of the turnover, and considering the quality of the blooms, values were cheap. Sprays ranged from 3d. to 8d. per bunch, while disbudded varieties were sold at the following rates: *La Paetole*, white and yellow Thorpe, 9d. to 1/3 for 6's; *Aurante*, special, 9d. to 1/-, small, 5d. to 9d.; *Cranford Yellow*, 8d. to 1/-; *Dolores*, 8d. to 10d.; and *Betty Spark*, 5d. to 8d. Carnations were worth from 2/- to 4/- per dozen, and *Michaels* Daisies, from 2d. to 4d. per bunch. Irregular prices were obtained for *Liliums*, *L. longiflorum* (*Harrisii*) realised from 3/6 to 5/-, but *L. longiflorum rubrum* was lower at 1/9 to 2/-. *Asparagus* foliage ranged from 1/- to 1/6 per trail, and 6d. to 2/6 per bunch, while *Smilax* returned 2/- to 2/6.

In the fruit section Apples were slow to move, but notwithstanding the lessened consumption, prices were maintained round former levels, viz., Canadian Kings, 30/- to 34/- per barrel; Greening, 26/- to 28/-; Baldwin, 24/- to 30/-; Greening, 28/-; Spy, 31/-; and Fallwater, 26/-; Virginia Baldwin and York Imperial, 26/- to 30/-; Ben Davis, 24/- to 28/-; Washington Newtown, 12/- to 13/6 per case; Oregon Newtown, 14/- to 15/6; British Columbia Jonathan, 11/6 to 14/6; and McIntosh Red, 12/- to 14/-; English Bramley's Seedling were worth 16/- to 20/- per cwt.; Lane's Prince Albert, 18/- to 22/-; and Warner's King, 17/- to 22/-. Californian Winter Nels Pears fluctuated between 15/6 and 17/6 per half-case; Jersey Doyenné du Comice, 10d. to 1/- per lb.; and Pitmas-ton Duchess, 8d. to 10d. Jamaica Oranges averaged 20/- to 22/- and South African Oranges, 24/- to 26/-. Grape Fruit sold at 18/- to 23/-. Lemons continued scarce and dear, 300's making up to 28/-. Smaller consignments of home-grown Grapes were handled. English Alicante were worth 1/3 to 1/9 per lb.; Gros Colmar, 2/- to 2/9; and Scotch Gros Colmar, 2/- to 3/6.

Scotch Tomatoes advanced to 1/2 per lb.; Dutch Tomatoes sold at 5/6 to 6/- per chip of 12lb.; and Tenerife Tomatoes averaged 30/- per bundle. Cucumbers were firm at 7/- to 10/- per dozen. Cauliflower fetched 3/- to 6/-. Lettuces, 1/- to 1/6, and Celery, 2/- to 2/6.

GARDENING APPOINTMENTS.

Mr. H. G. Aldworth, for the past three years gardener to LEONARD SHARPE, Esq., Jobs Close, Knowle, Warwickshire, and previously gardener to MAJOR ALBERT PAM, Wormleybury, Brookbourne, Hertfordshire, as gardener and keeper of The Albert Park, Abingdon, Berkshire.

Mr. D. Crombie, previously gardener to F. H. WALKER, Esq., Great Martin, Shrookley Row, Twyford, Berkshire, as gardener to G. E. R. SUTHERLAND, Esq., Little Laver Hall, Harlow, Essex.

Mr. Richard Nisbet, as gardener to J. W. COLT-HURST, Esq., Gargrave House, Gargrave, Leeds.

Mr. W. E. Wright, for the past two years and nine months gardener to J. G. MOREL, Esq., Henstall Court, Pontychn, S. Wales, and previously gardener for six years to Sir OSWALD BOSANQUET, at The Florence, Gloucestershire, as gardener to J. G. HAYTHE, Esq., Stockton House, near Rugby, Warwickshire.

ANSWERS TO CORRESPONDENTS.

ALUM AS A CONTROL FOR SLUGS. *E. F. C. and H.*

An alum solution is extremely simple to use, all that is necessary being to dissolve the material in a suitable vessel by means of hot water, and make certain that a little of it always remains undissolved at ordinary temperatures, thus ensuring that the solution is saturated. For solutions, lump alum, which is cheaper, may be used instead of the powdered material. Also it contains no grit or other matter which would choke the nozzles of sprayers and is thus less troublesome than sulphate of aluminium and lime solution, which must be strained before use. Alum solution is ideal so far as easy application goes, and sprayers may be easily cleaned if necessary after use by having water forced through them. A saturated solution is approximately one pound to one gallon of water.

APPLE DISCOLOURED: *S. H. L.* The discoloured Apple—Peasgood's Nonesuch—is suffering from black mildew, caused by *Sclerotinia fructigena*. All dead wood and cankers should be cut out and the trees well sprayed with Bordeaux mixture, of the 4.4.50. formula, just before the flower buds open. If the disease is bad the trees should be sprayed again directly the bloom has set, with either Bordeaux mixture or lime sulphur. If the fruit spurs are attacked in the spring they should be cut off and burned. The leaves of Lord Suffield Apple and Late Transparent Gage are suffering from Silver Leaf disease.

APPLE FRUIT BLACKENED: *A. B. N.* The black Apple you sent is attacked by *Sclerotinia fructigena*. See reply to *S. H. L.*

BIRDS AND FRUIT TREES. *Mrs. E. H. C.* Nothing short of netting the trees with a very small meshed net will prevent tits damaging the fruits and buds. Spraying Gooseberry and Currant bushes with Quassia extract at a moderate strength, following with a liberal dusting of lime and soot, is successful in some seasons, and the spraying should be repeated on several occasions, but not in wet weather, for the materials get washed off by rains. Sparrows may be kept from the bushes by placing lines of black cotton at intervals of four feet and at different heights above the bushes; a line two feet above the bushes and then a line three feet or so and one along the sides. The cotton should be secured to Bamboo stakes. In the case of tits and top fruits, the most effective method is a little shot gun. Much damage is sometimes done to buds of Gooseberries before protective measures are taken. Prune early and place the cotton in position so soon as the work is finished.

BRIAR STOCKS FOR ROSES. *J. S.* In many parts of the country there are men who make a speciality of obtaining Briar stocks from hedgerows and other waste places. These are supplied to nurserymen and others who need them. Possibly you could obtain a few from your nurserymen. Stocks of *Rosa rugosa*, as you may possibly be aware, are now often used for standard Roses in the place of Briars.

BOOK ON PEACH CULTIVATION. *A. G.* The only work we know especially dealing with fruit cultivation is *The Book of the Peach* by the late Mr. W. H. Ward, but this is now out of print. You might, however, be able to obtain a copy from a second-hand bookseller. Write to Messrs. Foyle, Charing Cross Road, W.C., or Messrs. Wheldon and Wesley, Ltd., 2, Arthur Street, W.C. 2.

ROMNEYA TRICHOCALYX. *H.* *Romneya trichocalyx* is perfectly hardy when established, requiring a well-drained soil and a dry, warm situation. It is, however, advisable to protect your seedlings by covering them with dried Bracken Fern or other similar material, or a cloche, more to ward off

excessive rains than to protect from frost. When the plants have become more established and made more growth, pruning is necessary, as the finest flowers are produced on the new growths.

CELERY DISEASED. *J. M.* Your Celery leaves are attacked by *Septoria apii*, a disease which may be controlled by sterilising the seed with hydrogen peroxide. If the disease appears in the seed bed the plants should be sprayed with Bordeaux mixture so soon as they appear above ground and once or twice a week until transplanted. If the disease develops in the garden the plants should be sprayed with Bordeaux mixture at ten-day intervals.

FOLIAGE PLANTS FOR SUMMER BEDDING. *S. B.* Foliage plants suitable for your purpose that may be raised from seed include *Albizia* (*Acacia*) *lophantha*, *Amaranthus tricolor* and its varieties, *A. melanocholus ruber*, *Dracaena-leaved* and *Chilian Beetroots*, *Centaurea ragusina* (*candidissima*), *C. gymnocarpa*, *C. Clementei*; (the *Centaureas* are all grey-foliaged plants, and *C. ragusina* is best sown now or very early in the New Year; *Cineraria maritima*, *Grevillea robusta*, sown during the autumn; *Pyrethrum partheniifolium aureum*, *Kochia trichophylla*, *Melanthus major*, *Perilla nankinensis*, *Sclanum marginatum*, which generally grows three-feet high but may be kept down to the desired height; and *Sutherlandia frutescens*.

HEAD GARDENER'S NOTICE: *W. J. M.* As you were engaged on the express agreement of a month's notice on either side to terminate the engagement you are entitled to a month's notice or a month's wages in lieu of notice and the fact that the estate has been sold does not affect the situation.

LEAF OF THE MISTLETO. *F. A. G.* The leaves of the Mistleto, *Viscum album*, are opposite, or rarely in whorls of three, exstipulate, oblanceolate to obovate-lanceolate, obtuse, entire, sessile, leathery, five- to seven-nerved, glabrous, pale green or yellowish-green. No book on the subject we have consulted states whether the leaf is petiolate or sessile. Examination of a specimen from Bucks, growing on the Hawthorn, shows that the leaves are sessile or stalkless. The edge of the leaf tapers gradually and continuously to the joint at the base. The leaf has five nerves that do not join in one bundle at the base, as in a petiole, but run to the very base separately. Some illustrations would give the idea that the leaves are shortly petiolate, but the specimen examined showed the base to be alike in every respect to the rest.

MEALY BUG ON VINES: *H. C. and R. K. H.* You can do nothing to rid bunches of Grapes of mealy bug except placing them under a tap of clean water. This is a drastic remedy and will wash off the bloom, but is the only method to adopt in a bad case like yours. When mealy-bug becomes established on vines and in the bunches of Grapes, it is a most difficult pest to eradicate, and bunches which are badly infested are almost valueless. It is of the greatest importance that attacks should be prevented, and in no case allow other plants to be placed in vinerias that are known to be affected. During the winter thoroughly wash the house with hot water and soft soap. Remove all loose and inert soil from the borders, and wash the vines when they are dormant with Gishurst Compound according to directions. If it is possible for you to cyanide your vineyard when the vines are dormant, this is a cheap and effective remedy, but requires to be done with great care.

NAMES OF PLANTS. *E. E. E.* 1, *Prunus lauro-cerasus*; 2, *Cupressus Lawsoniana*; 3, *Daphne Laureola*; 4, *Prunus lusitanica*; 5, *Quercus pendunculata*; 6, *Betula alba*; 7, *Taxus baccata*; 8, *Kerria japonica* fl. pl.;

9, *Forsythia suspensa*; 10, *Hypericum calycinum*; 11, *Azara microphylla*; 12, *Arbutus hybrida*; 13, *Spiraea japonica*; 14, *Nepeta Mussinii*; 15, *Rudbeckia laciniata nitida*; 16, *Anchusa myosotidiflora*; 17, *Montbretia crocosmaeflora*; 18, *Artemisia lactiflora*. *W. S.* 1, *Alyssum saxatile*; 2, *Hieracium aurantiacum*; 3, *Spiraea* species; cannot identify without flowers. *R. E.* Specimen too scrappy to identify. *L. L. L.* 1, *Selaginella Braunii*; 2, *Pteris serrulata* var. *cristata*; 3, *P. cretica* var. *Wimsettii*; 4, *Saxifraga sarmentosa*.

PRUNING FRUIT TREES. *H. T.* If your cordon Apples have been properly summer-pruned, very little winter pruning will be necessary, except to thin out and regulate the shoots, always giving preference to well-placed spurs to improve the form of the trees and encourage the development of shoots where they are required to balance the tree. Short, stubby growths, with the leaves arranged in a whorl and a blossom bud in the centre, should not be removed. This especially applies to such varieties as Lady Sudeley and Allington Pippin. Short, stubby growths with a terminal wood bud should also not be shortened, as most likely these shoots will produce blossom buds the following summer. Generally speaking, side or lateral shoots which have been summer-pruned may be cut back to two, or at most three, buds to induce them to form spurs the following season. This pruning may be done after the fruits are gathered, and any overlooked completed after the leaves fall. Practically the same remarks apply to the summer and winter pruning of Pears and Plums, but Plums resent hard top-pruning without root attention. Unless they are root-pruned every two or three years, Plums become unfruitful, and the more the shoots are cut the worse they become.

ROSES DISEASED. *H. P.* The fungus present on your Roses is *Armillaria mellea*. This is a most destructive tree parasite and sometimes attacks Privet in hedges, but so far as we are aware, it has not hitherto turned its attention to Roses. You will find an account of the fungus in the British Museum's *Handbook of the Larger Fungi*, pp. 32-33. Judging from your letter it would appear that the rhizomorphs of the fungus are spreading underground. The fungus should be dug up and also any underground stems to which the "shoe-laces" are attached. We believe there must always be wood present, and this is tapped by the rhizomorphs which enable the fungus to spread. If the wood is removed as well as the rhizomorphs the fungus fruit bodies should disappear. We would point out that the fungus is a very dangerous one to have in the garden, and its presence should be taken very seriously, but there is no reason to suppose that it was introduced with the stable manure.

VINES. *F. P.* The over cropping and careless watering of vines having their roots in a cold, badly-drained soil, are amongst the chief causes of shanking in the berries. The demand made upon the roots is more than they can meet, and eventually shanking results, causing the berries to shrivel and turn sour. As your vines are old, you should remake part of the border and bring the roots nearer to the surface. If you train up young rods and guard against over cropping, it is quite possible shanking may disappear. The cause of your Foster Seedling Grape cracking is that you either allowed the border to become too dry during the period of the last swelling of the berries, or promoted too much atmospheric moisture without sufficient air and warmth in the pipes to counteract condensation of moisture.

Communications Received.—A. S.—A. E. N.—R. G.—F. W. C.—M. J. B.—A. T. H.—E. B. W.—G. C. J.—A. M.—A. E. T.—J. T. W.—F. H. A.—J. M.—C. W.—R. A.—E. B.—X. Y.



ATRAPHAXIS MUSCHKETOWI.

THE Gardeners' Chronicle

No. 2030.—SATURDAY, NOVEMBER 21, 1925

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SUPPLEMENTARY PLATE.

Atraphaxis Muschketowi.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.7°

ACTUAL TEMPERATURE—
The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 18, 10 a.m. Bar. 30.5 Temp. 46°. Weather Sunny.

EVERYONE has joined in offering well-merited congratulations to the present Minister of Agriculture on his appointment as Viceroy of India. During the short time he has been at the Ministry the Rt. Hon. E. L. Wood has won the respect and regard of agriculturists. He has shown himself sympathetic to their interests and difficulties and has encouraged the hope that his knowledge of industry might help to solve some of the many problems which must be solved before agriculture is likely to become prosperous once again. But now he is gone. His successor will doubtless exhibit in no less degree all those high and beneficent activities which we are accustomed to admire in Ministers of State. Yet the frequent change of personnel evokes reflections which, though they do not detract from our gratitude in finding another distinguished man at the head of the Ministry, deserve expression. Those who are beginning to grow old, when they reflect on the changes they have known may well be excused if they incline to believe

that no changes in the last thirty years have been more various than those which have occurred in the headship of the Ministry of Agriculture. Many of the changes have, of course, been inevitable—the direct consequence of the political system. That is the price paid for the blessings of party government. Whether the blessings are cheap at the price is not a practical problem. For although the ordinary man may not be able to understand why, since agriculture is a national problem, it should not be administered nationally, he also knows that it is useless to kick against the pricks of custom and that the principle of "to the victor the spoils" is hallowed by immemorial custom and not to be violated by common sense. Apart, however, from political change, the office of Minister of Agriculture has been for far too long the vestibule to advancement. "An Amurath an Amurath succeeds," and the succession is so swift that it is impossible to recall the numbers or the names of the legion of Ministers of Agriculture. The average length of office of a Minister of Agriculture is as brief as the devotion which each minister in turn brings to his duties is profound. It may, of course, be urged by the cynical that *tout ça change tout c'est la même chose*, that the permanent officials direct the correspondence and that the minister only licks the postage stamps. We do not share that view and we are sure that it would be scouted by all who know the loyal appreciation of leadership which permanent officials offer to their chief, or the great influence which a capable minister can elicit in the faithful discharge of his routine work no less than in initiating progressive measures. There can be no doubt but that the frequent changes which the Ministry has suffered have a grave effect on the confidence of the agriculturists in the Ministry. Those who know the Ministry of Agriculture best are satisfied that it is one of the best administered offices of state. Yet it is unfortunately true that the Ministry is not so universally beloved as it deserves to be. This is in part due to the unfortunate fact that it has to combine the duties of agricultural policemen with those of pioneers of progress. An inspector may come to us to render help, and the help may be and often is constructive and valuable. It may, however, be destructive and involve the application of restrictive regulations. Were it possible to separate the two branches of the Ministry's work it would help much towards a better and fairer appreciation of the excellent work that it is doing. But probably it is not possible to effect such a separation. If that be so the only thing that can be done, and that in our opinion should be done, is beside ensuring the appointment of the best man—which of course, is always the case—to ensure also within the ambit of political vicissitudes that the minister appointed should not *rendre son tablier* in order to take another situation at such frequent intervals, as, if memory serves, has been the case during the past quarter of a century. No man alive coming first to the Ministry can master the multiplicity of its work in the course of a year or two. That is certain, yet a year or two would seem to be the limit of occupancy of the office. Just as he is beginning to learn his work the minister is called to larger spheres. It is, of course, pleasant to believe that a British minister, like the British soldier, can go anywhere and do anything. That cheerful belief is, however, tempered by the apprehension that the rapid translation to which Ministers of Agriculture are subject, gives them no time to demonstrate its truth.

British Mycological Society.—The following programme has been arranged for the meeting of this Society to be held in the Botany Department, University College, Gower Street, W.C.1, on Saturday, November 21st, at 11 a.m.: Mr. S. Dickinson—New Method of Isolating Single spores; Mr. W. J. Dowson—Fall of Apples associated with Core Rot due to *Sclerotinia fructigena*; Mr. J. Ramsbottom—*Fragmenta Mycologica*, IV.; Mr. Alex Smith—*Penicillium* Diseases of *Gladolus* and *Narcissus*; Miss A. Lorrain Smith—Lichen Dyes; and Mr. W. Buddin—Life History of a Fungus Parasitic on *Antirrhinum majus*.

Do Varieties of Apples remain Constant?—Fruit growers in the United States having maintained that the Baldwin Apple has developed new strains under different conditions, a trial test was made in the Station grounds at Geneva to determine whether this was true. Eighty-four Baldwin Apple trees were purchased from forty different districts in the United States and planted under similar conditions. This year the trees gave full crops of fruits and all eighty-four produced Apples similar in size, colour, season and quality. The Geneva authorities state that while there may be strains of the Baldwin Apple in different parts of the United States, it seems fairly certain from this experiment that they have not originated necessarily because of differences in environment. Growers in this country are aware that there are different types of such varieties as Blenheim Pippin and Ribston Pippin, but no explanation has been forthcoming as to how these have originated, unless they are seedlings of a similar cross.

Winter Thunderstorms.—Mr. S. Morris Bower, Langley Terrace, Oakes, Huddersfield, writes:—In December last an appeal was made through the press for information regarding thunderstorms occurring in the British Isles between January 1st and March 31st, 1925. I should like to thank the large number of observers who sent reports. The number of days on which thunder or lightning was reported was as follows:—

1925.	England & Wales.	Scotland.	Ireland.	British Isles.
January	10	12	10	17
February	20	10	8	23
March	16	5	4	17
Total (3 mos.)	46	27	22	57

There was a large area in Wales and another in the northern counties of England which were free from storms; also a belt stretching from East Yorkshire to South-east Wiltshire. The stormiest areas in England were mainly on or near the south coast; the southern parts of Sussex and Surrey were very stormy. In Scotland the storms occurred mainly in the central portion of the west coast. The investigation will be continued during the coming winter.

Taxing French Greenhouses.—French horticulturists are up in arms against a proposal which is being made by the fiscal authorities to place a tax on greenhouses. A similar proposal was made, and abandoned, some years ago, but the present need for money is so great that this time it is likely to materialise unless the opposition is sufficiently strong to prevent it from being carried into effect. The societies concerned are doing their best to fight the proposal on behalf of their members, and point out that the nurseryman's greenhouse is an "instrument of work," and that a tax upon it is quite inadmissible.

New Produce Markets for Brussels.—On the initiative of the Co-operative Horticultural, Viticultural and Market Gardeners' Society of Brussels, that city is to be provided shortly with large new markets, to be erected at the angle of the Dixmude, Ypres, and Nieupoort Boulevards, near the canal and the Allée-Verte station. The sales hall will cover 2,300 square metres of space, and there will be storage cellars comprising 2,000 cubic metres.

The Development Commission.—The Development Commissioners in their fifteenth annual report, which was issued by the Treasury on the 17th inst., state that knowledge of the principles of agricultural practice is in some respects well ahead of the application of them; the rate at which instruction is reaching and influencing the methods of the ordinary occupier of land is too slow, and therefore no practical means of speeding up the process should be neglected. With regard to public expenditure on agricultural research, education and improved methods of farming, the Commissioners state that these latter have the effect of broadening the outlook of the agriculturist and stimulating the interest of the village community, thus benefitting men as well as agriculture. The Commissioners have with great reluctance come to the conclusion that they can recommend no further advances towards the Village Clubs Association. They are of opinion, however, that there is a strong case for the village hall and are glad to recommend the adoption of a scheme put before them by the National Council of Social Service by which small loans free of interest will be made to villages wishing to have a hall of their own. The question of co-operative marketing and purchase is being examined by a group of skilled investigators under the direction of the Ministry of Agriculture.

Potato Scab.—Growers are often perplexed by their Potatoes forming scabby growth on the skin, which spoils the appearance of the tubers, but does not greatly detract from their edible qualities. Practical men usually attribute this defect to mechanical injury caused by various irritating substances in the soil. Recent investigations, however, have proved that scab in Potatoes is caused by the attacks of minute fungi belonging to the group known as *Actinomyces*. The scabby condition is somewhat akin to galling, for the irritation set up by the organism causes the growing tuber to develop loose, corky tissue at the infected spots, instead of a normal, smooth skin. It is an attempt on the part of the Potato to exclude the invading organism, and as a rule, this is successful, for the parasites are confined to a more or less superficial area, the internal tissue remaining unaffected. In a leaflet* on the subject published by the Ministry of Agriculture, the placing of grass mowings in the trenches is recommended, or they may be dug in the soil previous to planting at the rate of half to one barrow load to four square yards of land. Where the soil is alkaline, lime, ash and soot should not be used, but its alkalinity should be counteracted by the use of phosphate of ammonia. A dressing of flowers of sulphur at the rate of one ounce per square yard is also recommended. As in the case of all diseases, affected peelings and scabbed tubers should not be thrown on the manure heap, but destroyed by fire.

Honouring a Potato Raiser.—Mr. Donald McKelvie, Lamlash, whose services to the Potato industry were acknowledged recently by the Council of the National Institute of Agricultural Botany by the award of the Snell Medal for 1924, is to be entertained to dinner by the Arran Farmers' Society and presented with a testimonial at the Douglas Hotel, Brodick.

Sugar Beet Growing in Scotland.—A new organisation named the Caledonian Sugar Beet Company has been registered at Edinburgh, with the object of encouraging Scottish farmers to grow Sugar Beet, and to provide the growers with the necessary technical and practical knowledge regarding suitable soils, and the best methods of cultivation. It is proposed to lease small farms as demonstration centres in Ayrshire and Wigtownshire, and equip them with modern appliances which can be hired to farmers in the Beet-growing areas. The function of these centres will be to prove to farmers the practicability and commercial advantage of devoting a percentage of their land to the cultivation of Sugar Beet.

Mr. William Cuthbertson, V.M.H.—Mr. William Cuthbertson, the Chairman of Messrs. Dobbie and Co., Ltd., of Edinburgh, is one of the most outstanding figures in British horticulture to-day. He is a man of remarkable energy and has associated himself with almost every horticultural movement in the country. His enthusiasm in this respect is notable, and his advice is sought in connection with almost every new horticultural venture. Early in life Mr. Cuthbertson joined the late Mr. James Dobbie who had established a small seed business at Renfrew, but subsequently transferred to Rothesay, and in 1885 he purchased the concern and was joined in the enterprise by Mr. Robert Fife. The business was removed to Edinburgh in 1910, and was formed into a limited liability company in 1923. Mr. Cuthbertson has seen the business expand from a very small beginning to its present magnitude, and only those who are closely associated with him can appreciate his share of this great achievement. He has always taken a keen interest



MR. WILLIAM CUTHBERTSON, V.M.H.

in seed growing, and his special pride is the firm's seed farm at Marks Tey, Essex. There Mr. Cuthbertson watches very keenly the trial of novelties in Sweet Peas, and he gives personal supervision to the development of the specialities for which his house is famous. In connection with Marks Tey and his many activities in horticultural circles in London he has been almost a weekly visitor to the metropolis, and his journeys have been made by night. He has seldom missed one of the fortnightly meetings of the Royal Horticultural Society, and after attending to many duties there has occupied his chair the next morning at the Edinburgh headquarters, as fresh and keen as ever. In Scotland, he has greatly interested himself in Potatoes, and has done much to raise the importance of Scotch-grown seed. His advice has frequently been sought by the Boards of Agriculture of England and Scotland in connection with Potatoes. He has been a member of the Council of the Royal Horticultural Society for several years; is Chairman of the Wisley Gardens Development Committee; and is actively associated with many of the leading horticultural associations and societies throughout the country. He has been president of the Horticultural Trades' Association, and is associated in an advisory capacity with the National Institute of Agricultural Botany. Mr. Cuthbertson is also a director of the Scottish Plant Breeding Station, and takes a keen interest in many other spheres of agri-horticultural work. He has received

the Victoria Medal of Honour from the Royal Horticultural Society, and is a Justice of the Peace for his native county of Mid-Lothian. Mr. Cuthbertson's chief interests have always been horticultural, and although he has been frequently pressed to stand for parliamentary honours he has always declined. He has identified himself in his own cheery way with every movement for the development of British horticulture, and this work is also his hobby, indeed, he has devoted his life to horticulture, and has achieved his present high position in the profession by endless and untiring work. After a long spell of arduous work Mr. Cuthbertson, accompanied by Mrs. Cuthbertson, has just started on a trip round the world, which will occupy about a year. This will afford him a pleasant and well-earned relaxation from a busy life, and it is hoped that both will return immensely benefited from their travels.

Seed Testing at Cambridge.—During the past year there was an increase of sixteen per cent. in the number of samples received for testing at the National Institute of Agricultural Botany and for the twelve months ended July 31, 1925, 21,894 samples reached the Institute as compared with 18,886 in the preceding twelve months. Beside those mentioned, 3,600 samples were tested in the course of the year's investigational work, or 1,487 more than in 1923-24. The majority of these special tests formed part of the investigation into the loss of vitality of seeds during storage.

Scottish Soil Survey.—Accompanied by Principal Shearer and Dr. Ogg, soil advisory officer to the Edinburgh and East of Scotland Agricultural College, Sir John Gilmour, Secretary for Scotland, paid a visit to the Lothians last week, where the first detailed soil survey in Scotland is in operation under the supervision of Professor Veitch, an American soil surveyor. Sir John, who takes a keen interest in agricultural affairs made a careful examination of the types of soil which have been mapped, and expressed the view that the soil survey will form an interesting and valuable contribution to Scottish Agriculture from both the educational and the practical points of view.

Heidelberg Botanic Garden.—Herr Steinberger, late of the Marburg Botanic Garden, has been appointed to the Heidelberg Botanic Garden in succession to the late Director, Herr Erich Behnick, whose death was announced in our issue of September 19, 1925 (p. 239).

Ex-Service Men on Small Holdings.—During the years 1919-1924, 16,000 new small holdings were provided by County and County Borough Councils, chiefly for ex-service men, on some 240,000 acres of land at a cost of over £15,000,000. In no other country has so much effort been made by public authorities to settle discharged soldiers on the land, and nowhere has so much money been expended for the purpose. The average price of land purchased under the Small Holdings and Allotments Act since the war is about £42 10s. per acre. In many cases the Councils have provided holdings equipped with dwelling-houses and farm buildings. From the end of the war up to the end of 1924 no fewer than 2,749 new houses of this type were erected, compared with 744 in the period 1908-1914. The scheme is said to have been fairly successful, for it is stated that failures represent only ten to twelve per cent. of the total number of men provided with holdings. We know, however, of cases under our notice, where the struggle has been a hard one, and the small-holders have been compelled to seek work as labourers during the winter in order to provide themselves with food. The difficulty of securing a living wage was especially hard during the years 1921 and 1922. In some cases, where Potatoes were grown extensively, the crop did not pay for the cost of seed and manure used. With experience, however, these same men are making the venture more successful, and finding that some of the finer kinds of vegetables, poultry, pigs and flowers are a great asset on their small holdings. The chief difficulty

* Leaflet No. 137. Ministry of Agriculture and Fisheries

of these men is to find sufficient capital to pay the cost of manure and extra help for digging. The work is hard, and only men possessed of grit and determination can hope to be successful.

Generous Gift to a Gardener.—For the past nineteen years Mr. W. E. Goble has been gardener to Sir Edward Boyle, Bt., at Ockham, Hurst Green, Sussex, but recently resigned that position for the purpose of taking up a market gardening business. As a parting gift, in appreciation of his services, his employer presented him with a cheque for a very handsome sum.

A Sundial Bed.—The formal bed illustrated in Fig. 166 proved the most popular feature in the pretty public park at Westcliff-on-Sea, Southend, during the past summer. The centre was occupied by a floral sundial; the table

care of Mr. Alfred Keeling, brother of the local Parks and Gardens Superintendent, who has been engaged at Chalkwell Park since it was purchased some twenty years ago. Mr. Alfred Keeling has received many compliments from townsmen and visitors on the fine condition of this park, and especially on the excellence of the cricket pitches and other sports grounds.

An English Nursery Firm's Model Catalogues.

—In a review of Mr. E. A. Bunyard's second *Handbook of British Fruits*, Mr. Hedrick, the well-known American pomologist, pays a high tribute to the catalogues sent out by Messrs. G. Bunyard and Co., Ltd. He states that the workers in pomology at the New York Agricultural Experiment Station, who endeavour to obtain nursery catalogues from every part of the world, place Messrs. G. Bunyard and Co.'s catalogues as the best in the list, and

The fruit trees here, however, never succeeded well; and when we look at the subsoil this is not to be wondered at; in fact, many gardeners have asserted that it was of no use to plant trees at Garnstone, for they would never do any good; the evil lay in the want of well-made concreted borders. I differ from Mr. Fleming as to the cause of his Grapes in one house not colouring. We see badly coloured Grapes obtained from Vines in the best made borders, and we see finely coloured ones one year and badly coloured ones next year out of the same house and from the same Vines. Now, if the roots were the sole cause, the fruit would exhibit the same colour every year until the condition of the roots was altered. What is the reason we seldom see badly coloured Grapes on the open walls? Although only half ripe they possess a fine black bloom, and that on all kinds of soils. My own experience teaches me that a low

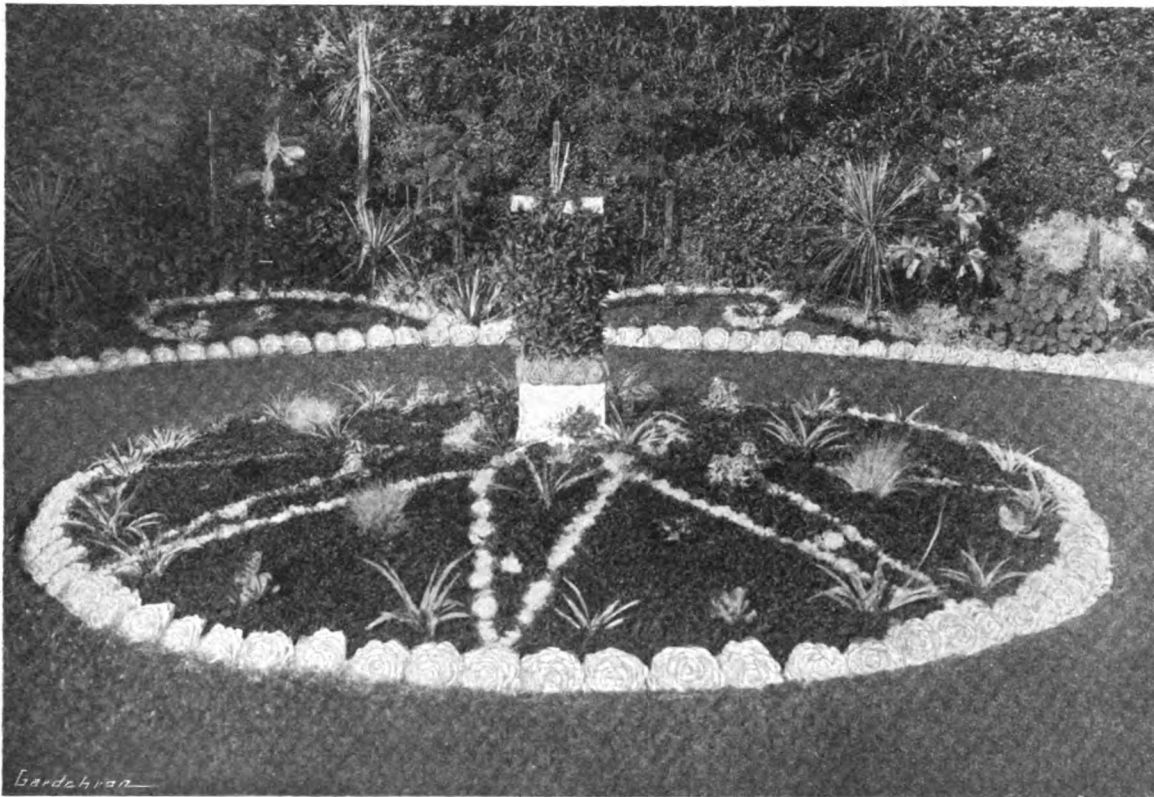


FIG. 166.—THE SUNDIAL BED IN CHALKWELL PARK, WESTCLIFF-ON-SEA.

was covered with *Herniaria glabra* planted in a small quantity of soil, and the column was covered with *Tradescantia tricolor*, the necessary compost for its sustenance being held in position by wire netting. The star was worked out in silver-leaved *Echeverias*, and the whole bed was outlined with *Echeveria secunda glauca*. The groundwork was furnished with *Alternantheras*, principally the red variety, although some of the golden-leaved *Alternanthera* was employed near the centre. Various dot plants were utilised, including red *Iresine*, golden *Coleus*, *Cockscombs* (*Celosia*), *Anthericum Liliastrium* and *Echeveria metallica*. The bed was arranged in a warm corner of the park, facing south, with a background of shrubs and trees that afforded shelter from cold winds. In the forefront of the shrubbery various sub-tropical plants were utilised, including *Dracaenas*, *Opuntias*, *Cereus*, *Acacia*, *Grevillea robusta*, *Eucalyptus Globulus*, and *Ricinus communis*, with a border of *Echeverias*. The bed and the sub-tropical plants remained in full beauty up to a week or so ago and gave pleasure to thousands of visitors. The park itself has never been more beautiful than this year under the

he advises American nurserymen who seek to improve their catalogues either for educational or advertising purposes, to secure those of Messrs. G. Bunyard and Co. as patterns. This high praise is well merited, for the Maidstone firm's catalogues are beautifully printed, well edited and cleverly compiled.

Appointments for the Ensuing Week.

Tuesday, November 24: Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, November 25: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Mitcham, Tooting and District Horticultural Society's meeting. Thursday, November 26: Royal Botanic Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Concreted Borders.*—As a proof in favour of concreting, I have been obliged to concrete all the borders here, not only for Vines, but also for all other kinds of fruit, the subsoil being very bad. Now, in my last situation, Glevring Hall, Suffolk, which was famed for the fruit, no necessity existed for concreting.

temperature, dry and airy at the first onset of colouring, is what is wanted to well colour and flavour Grapes. If once you let your berries catch the crimson tint in a high temperature at this stage, all subsequent good management that can be given them cannot make them black again. I seldom have to complain of bad colour or shanking, and the only difficulty I ever had in colouring Grapes was when the Vines were planted in Pine stoves, and in seasons of wasps, when you cannot admit sufficient air at the proper stages of growth. Let it be understood that I am a great advocate for well-made borders at first, and well-regulated management afterwards. Last year I visited a gardener, who is considered a good Grape grower and he certainly had a house or two of finely-coloured Grapes. I called at the same place this year and found his Grapes badly coloured. He remarked that they wanted a little more fire-heat and closer keeping; but my opinion was, if he had given them a little less fire heat and a great deal more air, he would have been nearer the mark. *D. Kidd, Garnstone Park. Gard Chron., November 23, 1850.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.
Gatton Park, Reigate.

Calanthes.—The members of the deciduous section of this genus are producing their flower spikes, and will maintain a succession of bloom throughout the winter. As the foliage ripens, less frequent waterings will suffice, but the plants should not be allowed to become quite dry at the roots at any time until after the flowering period is over. The atmospheric conditions of the house should be somewhat drier when the flowers begin to open, or the plants may be removed to a house containing less moisture and having more airy conditions than that in which they have made their growth.

Odontoglossum citreum.—The new pseudo-bulbs of this species are nearing completion, and when they are thoroughly matured the roots will need only sufficient water to prevent undue shrivelling. To flower these Orchids satisfactorily, they should be afforded a long season of rest in a position near the roof-glass in a house having an intermediate temperature. This treatment should be continued all through the winter, and until the flower spikes are seen to be pushing from the centre of the young growths, when the plants should be immersed in tepid water in order to soak the compost thoroughly, and from then onwards through the growing season the roots should be liberally supplied with moisture.

Pleocines.—The Pleocines will soon have passed the flowering stage and new roots will begin to push forth from the base of the green shoots, when re-potting should be undertaken. Shallow pans that can be suspended are suitable receptacles. Ample drainage is necessary, as the plants need copious waterings when growing freely. In re-potting them the largest-sized pseudo-bulbs should be arranged together, as they will be more likely to produce flowers freely and ensure a well-bloomed specimen, than if the various sizes are arranged in the same receptacle. The smaller-sized pseudo-bulbs may be placed in separate pans and will form flowering specimens another season. The potting compost should consist of fibrous loam, Osmunda-fibre and Sphagnum-moss in equal parts, the whole chopped into short portions and well mixed with crushed crocks and coarse silver sand. After being repotted, the plants will require little or no water for some weeks, but as root action increases and the leaves begin to expand, they should receive a liberal supply of moisture.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Lily-of-the-Valley.—The present is a good time, if soil conditions are suitable, for planting this familiar plant. The sites should have been well-prepared previously by deep digging and the incorporation of a liberal supply of vegetable manure with the soil. After consolidating the crowns firmly, two or three inches apart, and when planting is finished, apply a light mulching of rotted manure to the surface. Fortin's variety is much stronger growing, bears finer inflorescences than the type, and is worth cultivation for special purposes, though not to the exclusion of the type.

Climbing Roses.—In large gardens, where climbing and rambling Roses are raised from cuttings every year to have young stock available for replenishments, the filling of gaps on pergolas and similar positions will now be a matter of routine. When this work is completed, there are often plants left, and these

may be utilised with good effect in furnishing old trees or loose, informal hedges in various parts of the woodland garden. Many of the vigorous varieties left to ramble at their will, are seen at their best under these conditions, making wonderfully effective displays. Such plants frequently reach a height of twenty-five feet or thirty feet in a few years, clothing the surface of their supporting medium with a mass of floral wealth. Where the budding of Roses is practised, seedling briars for next year's budding should be planted at suitable distances so soon as they are procurable, and generally the hedgerows on an estate will yield a few stocks for standards. These should be grubbed, trimmed, graded and planted so soon as possible in order to promote vigorous new growths for next year's budding.

Rhododendrons.—These handsome evergreens are amongst our most popular hardy shrubs, and are more accommodating in their planting requirements than most evergreens. Having a multitude of very fine roots near the surface, lifting with balls of soil and roots may be carried out with ease, hence the difficulty of exposing all the rooting system to a fresh medium is eliminated, and planting or replanting may be done at almost any season if soil conditions are suitable and reasonable care is exercised. Although peat is usually considered preferable as a rooting medium, it is not essential, as Rhododendrons may be grown successfully in any good, light soil. Heavy ground should be lightened by adding plenty of decayed vegetable matter, and if the land is very close and heavy, a liberal supply of coarse, gritty matter should also be incorporated with it. Rhododendrons are surface rooters, and it is wise to apply a liberal mulch of decayed manure after planting, whatever the season or nature of the soil. It is said that they do not succeed where lime is present in the soil, but this statement is probably too sweeping. Much of the soil here is of a peaty nature in which Rhododendrons and so-called American plants generally flourish. During the past six years, heavy annual mulches of vegetable refuse manure has been applied to the newer plantations of Rhododendrons. In the breaking down of this refuse chemical re-agents with a high calcium content are used, and I have watched the result of these mulches with considerable interest, but there is no apparent detriment to the health, vigour and floriferousness of the plants. Rhododendrons succeed in almost any position; the margins of woodlands offer ideal positions in that the background helps to set off the plants, and the partial shade afforded is helpful in maintaining colour in the flowering season.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLYORD, Westonbirt, Tetbury, Gloucestershire.

Forcing Preparations.—Much may be done at the present time to facilitate the forcing of plants later, when the supply of flowers from the usual winter-flowering plants becomes scarce. In establishments where house room and heating accommodation are limited, this disadvantage may be compensated for to some considerable extent by the judicious use of spare cold frames placed on a mild hot-bed. To provide material for the formation of the hot beds, a good supply of fresh tree leaves, now being collected from the lawns and shrubberies, may be stored in a convenient place for making up the beds. One half of fresh stable litter and one half of the fresh leaves in sufficient quantity to make a bed of the requisite dimensions should be mixed together at one time, turning the heap every two or three days for a fortnight before forming the bed. The latter should be made large enough to allow for a margin of some two-and-a-half to three feet all round the frames when placed in position. This will allow room for the provision of linings of fresh fermenting materials from time to time to raise the temperature of the interior of the frames. The frames thus prepared may be utilised for the forcing of bulbs. The pots or boxes containing the bulbs should

not be placed in the frame until the first heat is declining, and it is well to half-fill the frames with fresh tree leaves only, treading them firmly.

Forcing of Shrubs.—If span and three-quarter span pits of sufficient depth are available, the forcing of Azaleas, Lilacs, Deutzias, Viburnums, Spiraeas, Prunus and other shrubs may be successfully accomplished during winter and spring. If the pits are fitted with a circuit of hot-water pipes and a set of valves, this will be of great advantage, but for the first few weeks after transferring the plants from the outside atmosphere to that of the pit, no fire-heat should be afforded. Pits which are not fitted with hot-water pipes can only be utilised successfully, during winter as a starting place for the shrubs. When the buds have commenced to open, the plants should be transferred to warmer quarters.

Lily-of-the-Valley.—Where home-grown stocks are in sufficient quantities to provide crowns for forcing, the present is a suitable time to take up the roots, when the largest crowns may be selected for forcing. These should be potted forthwith, placing some eight or ten crowns in a six-inch pot. They should be potted quite firmly afterwards plunging the pots to their rims in ashes or fibre, out-of-doors. During December and onwards the crowns may be introduced to warmth in batches as desired. The roots should never be allowed to become dry. A sufficient number of the smaller crowns lifted from the beds should be transplanted in prepared ground to maintain the requisite stocks for future use.

Helleborus niger.—If desired for indoor decoration as flowering plants, clumps of the Christmas Rose may now be lifted, put into pots or pans and placed in a cool house. To provide clean flowers for cutting purposes hand-lights and light frames may be placed over the plants growing in the permanent beds. On a fine day give the plants a dressing of Clay's Fertilizer, and well water it in. This, together with the glass protection, will tend to a lengthening of the flower stems. The flowers should be protected from the depredations of slugs. The V.T.H. slug trap is the best protection of its kind that I know.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Pot Figs.—Where ripe Figs are required early in the season, the present is a suitable time to bring the first prepared batch of trees of the varieties St. John and Pingo de Mel under glass. Thoroughly wash and cleanse the house, and lime-wash the walls, etc. Suitable hot beds should be made of four parts leaves and one part stable litter and thoroughly firmed. Plunge the pots to their rims, allowing sufficient head-room for the development of the foliage. Very little, if any, fire heat will be required for the first few weeks, to maintain a temperature of 50° at night and 55° by day. Syringe the trees twice daily during bright weather with tepid water, and keep the floors damp at all times. It will be advisable to bring all pot Figs into a cold house now that the weather has turned very cold, both for the sake of the pots and the young growths that may not be too well ripened. Admit plenty of air on all possible occasions. Is brown scale or mealy bug are present, work over each branch with a moderately stiff brush and paraffin emulsion, repeating the operation until the trees are quite clean.

Strawberries.—A start may now be made with a first batch of thoroughly ripened crowns. See that worms are not present in the soil and the drainage is quite clear. Remove all decayed foliage and gently prick up the surface soil. Wash the pots and stand them on a shelf near to the roof-glass in a recently-started vinery facing south. Very little water will be required at the roots until growth commences, but

light syringings are most beneficial during bright days. If green fly appears, fumigate the house at once but make quite sure the foliage is dry. All pot Strawberries should by this date be placed in cold frames and given all the air possible, only keeping the severe frosts away from the pots. Very little water will be required by the roots, but the soil should not be allowed to become dust dry. Keep a sharp watch for slugs and attacks of green fly.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Planting Fruit Trees.—Where the ground has been prepared the planting of fruit trees should be proceeded with on every favourable opportunity. In digging the holes make them large enough to allow the roots to be laid out evenly without reaching the side of the holes. Examine the roots before planting the trees; cut away all damaged ones, and take the tips from those that remain. Fine and fairly dry soil, or half-decayed leaves, should be placed about the roots, and well shaken amongst them before treading the ground firmly. Old potting soil is very suitable for this purpose. The old soil mark on the stems should be a little above the ground level when the trees are planted, to allow for the soil sinking. On heavy, clay soils, I advise planting on the ground level and earthing up the roots with the surrounding soil. This will be sufficient for a few years, and during that time all refuse and soil of various kinds may be collected, put together in a heap and when well-rotted, used as a compost for top-dressing the trees as they require it. This method may be adopted with standards as well as bush trees, where it can be arranged. All trees should be made very firm in the ground when they are planted, and each one supported by a stake driven far enough into the subsoil to prevent the trees from being displaced by rough winds. The trees should be secured by one or two ties to the stake, according to their size, to keep them into position.

Loganberries.—These may now be planted; the most suitable position for them is on arches or against fences, where they can grow with freedom. Almost any kind of soil is suitable for them. Care should be taken of the young growths as they appear in the spring for they are easily damaged. When the plants get established they will not need such close attention.

Blackberries.—These need a little richer soil and a partially shaded situation where the soil remains moist in summer. The most suitable position for them is in the back grounds of a garden in a half-shaded situation; they need plenty of moisture in the summer. Attend periodically to the regulating of the growths, which need to be thinned occasionally.

Raspberries.—So soon as the leaves have fallen, the canes should be taken up and planted where they are required to form a new plantation. Grow them on ground that has been well enriched with manure and dug deeply, and place a top-dressing of manure over the roots after planting them.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Tomatoes.—Plants that were raised from seeds to produce early fruits should receive careful attention at this season of the year. Keep the house fairly warm and admit a little air on all favourable occasions. See that the plants are staked securely, and exercise great care in watering the roots during dull, dark weather.

Cucumbers.—Watch Cucumbers closely now and do not give the plants the copious supplies of water which Cucumber plants received earlier in the season. Keep the temperature of the house about 70°, unless in very cold weather, when it may be allowed to drop 7° or 8°, rather than resort to the use of excessive

fire-heat. Syringe the plants on all favourable occasions to ward off attacks of red spider. Be careful not to overfeed the plants.

Mushrooms.—Mushroom beds that were spawned at the beginning of October should now be producing a crop fit to gather. Twist the Mushrooms carefully from the bed when gathering them in order to prevent disturbing the surrounding buttons. Collect daily all the horse droppings that can be procured to make further beds, turning and attending to the manure as previously recommended. Water the beds and damp the floors and walls with tepid water when moisture is necessary, and maintain a steady temperature of 55° in the house.

Cauliflowers.—Plants that were raised from seeds sown in boxes for early supplies and are now pricked off in frames should receive plenty of air on all suitable occasions, removing the lights entirely for a few hours on mild, sunny days. The hardier the plants are grown the better will be the results, and they will give less

and the foliage also should be afforded protection from frosty winds. This may be done by placing well-feathered Spruce branches, cut into suitable lengths, firmly around the plants. Many of the finer varieties would flower freer in exposed districts if afforded this protection during winter and early spring.

Montbretias.—In districts where, in the past, it has been found difficult to winter these plants, they should be lifted, and the present is a suitable time to do this. Place the corms in boxes, pack sandy soil about them and stand the boxes in cold frames until the plants are ready for replanting in the spring.

Jerusalem Artichokes.—This vegetable, although quite hardy, is best lifted and stored in some convenient place, should tubers be required when weather conditions are unfavourable for digging them from the open ground. When lifting the tubers grade them into two sizes, using the larger ones for culinary purposes only, and retaining the small sets for replanting.

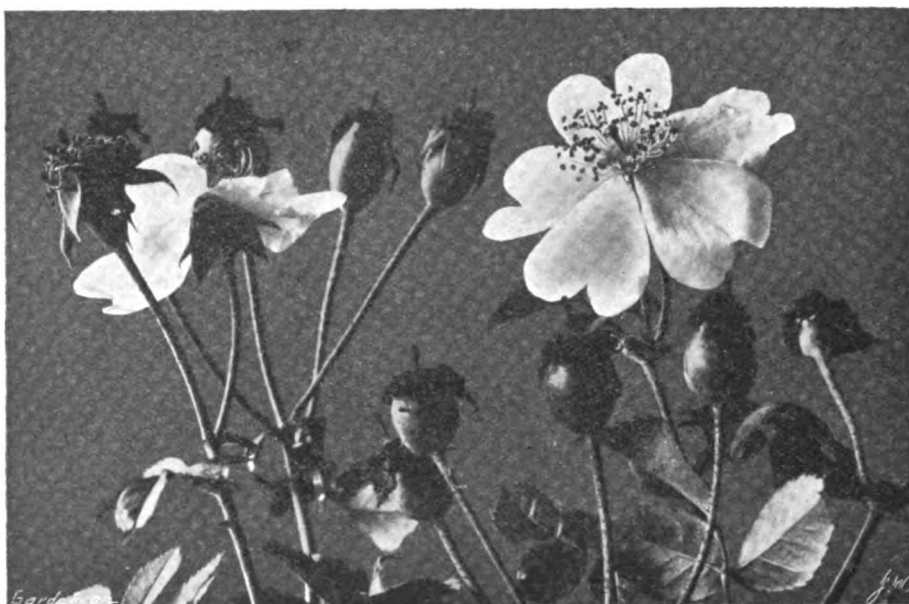


FIG. 167.—ROSA ARVENSIS, THE AYRSHIRE ROSE.

Showing flowers and fruits (see p. 406).

trouble. Keep the soil stirred in the frames to promote a sweet atmosphere.

Shallots and Garlic.—Examine all Shallots and Garlic in store, and remove any damaged bulbs and those that are becoming soft. The remainder should be laid out thinly in order to keep them dry and firm. The largest bulbs should be selected for planting early in the spring.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Pittosporum crassifolium.—This handsome New Zealand shrub is the hardiest of the section, and quite worth planting amongst other shrubs, the bright foliage showing up with good effect. It also is most desirable as a hedge plant if a sheltered site can be selected, for it is of rapid growth and erect, branching habit, quickly forming a thick hedge. Good drainage is necessary. From seeds sown here five years ago we have plants growing well, unprotected, and untouched by winds or frost that have occurred during that period. It is easily propagated from cuttings of half-ripened wood taken preferably with a heel and inserted in sandy soil, and covered by a hand-light until rooted.

Kniphofias.—These handsome plants should have a covering of light litter over the roots,

Ventilation of Vegetables growing in Frames.—During wet, dull days allow all the ventilation possible to Lettuces, Cauliflowers, Parsley, etc., growing in frames; on fine, dry days remove the sashes entirely, replacing them each evening. Stir the surface soil with a small hand hoe on frequent occasions.

Wall Trees.—The pruning and training of wall fruit trees may be undertaken now on every suitable occasion, leaving the digging of the ground and other necessary work for a later date. Cherries, Plums and Apricots should be attended to first. Whether the shoots are secured with twine or shreds care must be observed that the tie does not press the bark for this is especially harmful to stone fruits. The old ties should be removed and burned. Young, recently planted wall trees that show signs of making gross growth should be examined and root-pruned if necessary; with some it may be necessary to lift them entirely in order to root-prune them. Where this is done, secure the trees temporarily to the wall until the replaced soil has sufficiently settled to allow the tree to be properly trained to the wall at a later date.

Currants and Gooseberries.—The pruning of these bushes may now be undertaken, after which the ground should be manured and forked over. The present is also a suitable time to form new plantations of these fruits.

TREES AND SHRUBS.

ATRAPHAXIS MUSCHKETOWI.

(SEE SUPPLEMENTARY PLATE.)

THE species of *Atraphaxis* form an interesting and distinct genus of hardy shrubs belonging to the Natural Order Polygonaceae. About eighteen species have been described, all natives of the Old World, and found in central and western Asia, Greece and North Africa. They are not commonly cultivated in gardens, but five or six species are occasionally seen, the best known and most showy being *Atraphaxis Muschketowi*, the subject of this week's Supplementary Illustration. This is a deciduous shrub of lax, spreading habit, averaging three feet or four feet tall, and as much, or more, in diameter, occasionally, in very happy conditions, rising to six feet tall. The oblong or oval leaves, up to two-and-a-half-inches long, are the largest found among the hardy, cultivated species. The flowers are about one-third-of-an-inch wide, white, with rosy-red anthers and ovary. These are freely produced during May and June in racemes one inch to one-and-a-half-inch long. The flowers have no petals but sepals, some of which persist, and retain their colour for a considerable time, thus giving the plants a lengthy period of distinct beauty.

Atraphaxis Muschketowi is a native of the Tsin Shan mountains in central Asia. It was first introduced to Kew from St. Petersburg in 1880, and is figured in the *Botanical Magazine*, tab. 7435.

The soil for *Atraphaxis* should be a light, sandy compost and very well drained. An open position with full sunlight should be chosen for it, such, for example, as the higher ridges of a rock garden over the boulders of which the lax, straggling branches grow effectively.

Layering is the best method of increase; seeds do not generally mature on our cultivated bushes except in a hot sunny period such as we had during 1921. Cuttings may be rooted during late summer, the most successful method being to place them in sand in a "sun" or "Paris" frame.

Other species in cultivation, according to the recently published *Kew Hand List of Trees and Shrubs* include *A. Eillardieri*, Greece and Asia Minor; *A. buxifolia*, Caucasus; *A. lanceolata*, Temperate Asia; *A. spinosa*, Orient; and *A. Tournefortii*, Syria. *A. O.*

HYDRANGEA HORTENSIS.

Now that the autumn tints have been swept away by "November's chilly blast," we turn with something akin to gratitude to any flower or shrub that still defies the elements, and continues to make a brave show despite the lateness of the season; and where *Hydrangea hortensis* and its numerous varieties thrive out-of-doors, as they do here, the reward each year is given in no unstinted measure.

A long stretch of sloping bank with soil of a moist nature, not actually overhung by trees, but partially shaded from direct sunshine, has proved an ideal place for the plants, and to see the masses of dense green foliage—some of the leaves are nine inches to ten inches long, by six inches broad—with nearly every shoot terminated by a head of bloom, and rising up to eight feet high, is a glorious sight in November.

During mild winters, large quantities of these flowers have been cut for Christmas decorations, and three or four years ago blooms were gathered during February, thus showing that our mild and damp winters in no way affect these *Hydrangeas*.

On the bank alluded to, all the varieties are of the pink type, and very little variation in colouring can be seen, but another group some distance away annually produces large inflorescences of a very pretty pale blue, which is all the more effective by reason of a fine specimen of *Picea pungens glauca* growing amongst them, the glaucous tones of the latter enhancing the pale blue tints of the *Hydrangeas*; the whole backed by the dark green foliage of *Rhododendrons* forms a picture that is admired by all privileged to see it.

Hydrangeas may also be planted freely

in the open; in full sunshine, and, in suitable positions, they make very fine specimens in a few years, but we do not find the same luxuriant foliage on plants so grown as on those which benefit from the partial shade already mentioned, but this is compensated for in some degree by the beautiful tints the foliage assumes before dropping, red, bronze, and even purple hues predominating.

It will be interesting to see if the newer varieties of *H. hortensis*, sent out within the last year or two, will prove amenable to cultivation out-of-doors, and at the same time retain their distinctive colourings. About a dozen of these varieties are being grown here with a view to trying them out-of-doors when they get too large for pots.

VERONICA SPECIOSA HYBRIDS.

As it is not within the power of those whose "lines have fallen" in inland gardens to cultivate these beautiful shrubs successfully in the open, a few words of appreciation of the plants may be of interest, for they succeed well in our western gardens, brightening the dull days of November when other flowers are scarce. I feel sure they only require to be better known to be more widely cultivated where climatic conditions permit.

V. speciosa, the parent of these hybrids, is a native of the North Island of New Zealand. With us it flowers from September to November, its dark, shining green foliage being slightly tinged with purple, which harmonizes perfectly with its dark reddish-purple flowers, which are produced in great profusion at the tips of the current season's growths.

The variety *Ruby* is a great improvement in colour on its parent, the racemes being longer, and of an intense red or ruby colour; the foliage is shining, glossy-green, without the purple tints noted as being distinctive of that variety.

The variety *Blue Gem* is already widely distributed, and has proved a valuable acquisition in gardens. This plant blossoms freely from October until December, and its flowering is not affected by our most inclement November weather, its pale blue flowers opening out in close succession and forming an attractive feature when other flowering shrubs are over. This variety might be used as a hedge plant, as it is a compact grower, and may be cut back after flowering, say in spring, without detracting from its next season's floral display. The foliage is paler than that of the others, and the glossy, shining appearance is also absent, but it is a most useful variety, and somewhat harder than some of its companions.

V. speciosa Veitchiana produces flowers of an almost indigo-blue shade. It is a fairly strong grower, and the foliage resembles that of the parent more closely than any of the others mentioned. The dark blue racemes are five to six inches long, by about one-and-a-half inch in diameter, and the effect of this variety growing alone, side of *Blue Gem* makes a lasting impression on those who like blue shades.

The older variety, *Gauntlettii*, is another gem which, although not very hardy, has lived through several winters unprotected, being slightly damaged when the others escaped, but it breaks again freely in the spring, and during October and November produces its long, salmon-pink racemes in the richest profusion.

As all these *Veronicas* are easily propagated from cuttings inserted in a cold frame in October, any side shoots without flowers being used for this purpose, it is an easy matter to ensure that a stock of young plants of each variety is available to take the place of older plants, or to replace any that may succumb in an exceptionally severe winter. All the varieties mentioned may be safely left out-of-doors unprotected where the temperature rarely, if ever, falls below 20° Fahr. during winter. I may add that it is to the kindness of a friend at Southampton I am indebted for some of these varieties, as he found it useless to try to establish them there, but here they have been a great success. *A. T. Harrison, Culzean Castle Gardens, by Maybole, Ayrshire.*

HARDY FLOWER BORDER.

ANEMONE JAPONICA.

THE Japanese *Anemones* have for many years occupied a very prominent position in the herbaceous borders, and are desirable subjects for producing a bright effect during late summer and well into October, their delicate rose flowers being highly appreciated. Some of the newer varieties, such as the large, snowy-white *Louise Uhink*, are superior to the old white forms, the flowers being much larger, semi-double, and very freely produced.

Loreley is undoubtedly the best of the rosy-lilac varieties, having large, saucer-shaped flowers, and a double row of petals. The plant, moreover, is a continuous bloomer. *Mont Rose* is of slightly dwarfer stature, with flowers of a clear rose. *Beauté Parfait* is a showy, semi-double, pure white variety. *Alice* is an improved *Queen Charlotte*, the flowers being larger, and a deep carmine rose.

All the Japanese *Anemones* prefer a deep, rich soil, and resent frequent transplanting. They revel in borders, shrubberies or in half-shady places. By planting them in various situations in sun and shade the flowering season is prolonged.

LYCHNIS VISCARIA SPLENDENS PLENA.

THIS is a remarkably showy perennial border plant, well adapted for the rockery or herbaceous border. It produces an abundance of handsome, double, rose-scarlet flowers, that closely resemble a double *Stock*, and continues in flower from May to August.

The close, tufted habit and rigid, reddish foliage of this plant when associated with *Heuchera La France* or *H. White Empress*, both of which have white flowers, make a very pretty contrast. *W. Logan.*

ROSE GARDEN.

THE PLANTING AND MANURING OF ROSES.

OWING to the very "green" autumn, the flowering of *Roses* has continued very late this season, and planting is much later than usual. The best time for planting *Roses* is early in November, and those who have still to plant should endeavour to overtake their arrears as early as possible. Freshly-planted *Roses* should not be manured the first year, but a little litter placed on the surface of the soil about the stems will serve to keep frost from the roots, and in the spring provide a little stimulant to assist the development of growth.

If the soil is on the sour side, lime may be applied at the rate of one pound per square yard, and dug in before planting commences. Pruning should be deferred until well into the spring, but very long shoots may be shortened to preserve well-balanced specimens and prevent the plant being disturbed in the soil by high winds.

Permanent plants may receive a dressing of cow dung or pig manure, and if these materials are not available, stable dung may be substituted, and this is an excellent material for preventing damage to the roots by frost, and it also prevents injury to the stems from the same cause. Basic slag and kainit may be also applied, the former at the rate of half-a-pound to the square yard, and the latter at a quarter-of-a-pound to the square yard. If basic slag is applied it will supply a considerable amount of free lime, in which case liming of the ground will not be necessary. *W. Miller.*

ROSA ARVENSIS.

THE interest of a *Rose* garden is enhanced by the cultivation of a plant or plants of one or more of those species from which garden races of *Roses* have been evolved, but in many instances the species are beautiful garden subjects as well as interesting botanically and horticulturally. A free-growing species, the

parent of such fine old climbers as Dundee Rambler and Bennett's Seedling, is the Ayrshire Rose, *Rosa arvensis* (Fig. 167). This is a native plant and frequently met with in some of the eastern counties, where at flowering-time it covers itself with masses of pure white, glistening flowers, each bloom having a yellow base and a central boss of golden stamens. In nature it usually flowers a little later than the common Dog Rose, but it is often seen flowering well into the autumn.

Although not a climber, *Rosa arvensis* is a strong grower, and has arching branches which may extend so much as four or five yards, so that an old specimen in a convenient position becomes a cascade of blossom at flowering time. For the wild garden or the margins of thinly planted woods *R. arvensis* has much to recommend it. The stems are of a dull purple hue fairly well supplied with spines which become whitish with age, but are ruddy on the young wood. The following note accompanies the illustration of *R. arvensis* in *Bot. Mag.*, t. 2054, published in 1819:—"It has been known some years in our nurseries under the name of the Ayrshire Rose, but upon what grounds it has been so called is difficult to say, for upon the strictest enquiry, as we are informed by Sir Joseph Banks, no Rose of the kind could be heard of there or in any part of Scotland."

ALPINE GARDEN.

ARCTERICA NANA.

FOR a year or two we grew this tiny shrub in a bed of leaf-mould in the partial shade of woodland wherein several *Gaultherias* and other peat plants do very well. But, though it flowered there, it was not a great success, and was, therefore, removed to a cool ledge of the rock garden, where it has full exposure overhead. Soon after this it gave indications of recovery, and is now laden with the promise of bloom, is healthy in leaf, and generally contented-looking. It is growing in light, gritty loam, plentifully augmented with very old black leaf-soil, but the soil contains no peat. A. T. J.

LITHOSPERMUM ROSMARINIFOLIUM.

INTRODUCED from southern Italy in 1833, the subject of this note is still the most beautiful of all the shrubby *Lithospermums*, if not of the whole race. It has never been as popular in gardens as several better-known species, this probably being due to the fact that as it is normally a winter bloomer the flowers are very apt to be spoiled by frost. I suggest this as an explanation, for I have found the plant itself quite as hardy as any other of its kind. But, even so, the possibility of the flowers being destroyed should not and need not deter anyone who has suitable accommodation from enjoying the possession of a subject of such remarkable beauty.

One can never be quite sure when *L. rosmarinifolium* will bloom. This year it is early, the bushes being already (mid-November) dappled with the big blue blossoms whose colour is even more intense than that of *Gentian sino-ornata*; last year it was in February before they were at their best, and I have seen them so late as April. Then, unless the frost is exceptionally severe, and the position exposed, only the blossoms which are fully open become injured, and the plant is so recuperative that it very quickly recovers from such reverses. On rare occasions we have had the whole of the tender tips, including the buds, "singled" by frost, but even after this, fresh growth and flowers have appeared on the advent of milder weather.

A sheltered situation should be selected for this *Lithospermum*, and I find that a sunny southerly or westerly ledge of the rock garden or top of a low retaining wall, partly overhung by some larger shrub, suits it. Being absolutely drought-proof and naturally fond of a rocky foot-hold, we grow the plants in the poorest of stony soil containing plenty of old mortar. Our oldest bush measures about a yard across, the height being some ten inches.

Although the specific name of this species indicates the likeness of its foliage to that of Rosemary, the leaves are, in reality, a much richer, brighter and glossier green. A. T. Johnson.

TRICYRTIS MACROPODA.

THE genus *Tricyrtis* belongs to the Lily family and its members are commonly known as

stems being clothed with deeply-ribbed, amplexicaul leaves, five inches long and two inches broad. The flowers are disposed in a loose corymb, with whitish purple segments heavily spotted with purple dots, and are produced in May and June. *T. hirta* also comes from Japan, and has stems one foot to three feet tall and hairy leaves. The large flowers have white segments decorated with large purple dots.

T. latifolia comes from China, and in habit



FIG. 163. --TRICYRTIS MACROPODA.

Toad Lilies. There are five or six species, hardy perennial herbs with creeping rhizomes, natives of China, Japan and the Himalayas. They are beautiful and interesting plants, admirably adapted for half-shady positions in the rock garden or Fern borders, in sandy, peaty soils.

The species here illustrated, *T. macropoda* (Fig. 163), is a native of Japan and China. It grows from two feet to three feet tall, the

is like the above but it is not hairy. *T. pilosa* comes from the Himalayas, and grows under favourable conditions up to four feet tall. The stems and leaves are covered with soft hairs and terminate in a leafy raceme of good-sized flowers the segments of which are whitish, with large purple spots.

All these species are easy to grow in sheltered situations, and may be propagated by division or offsets. W. Irving.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XX—THE END OF THE SEASON.

We had still one collecting ground on the main Himalayan range to visit before we could start on our exploration of the Tsangpo gorge—namely, the Nam La. This high pass, it will be remembered, we had visited in July; and though we had not found very much there, what we had found was good.

On October 31, therefore, we left Pe and marched down the valley a few miles to our jumping-off place; and next day we started on the steep climb to the lake camp, which we reached on November 2. In the meadows I collected seeds of the violet form of the many-hued 'Sikkimensis' Primula, and in the forest, the 'Nivalis' Primula, which I had never seen in bloom; this last extends high up into the alpine region,



FIG. 169.—THE NAM LA.

where it grows amidst dwarf 'Lapponicum' Rhododendron. Two species of 'Maximowiczii' Primula are found here, scattered amongst the great boulders of the old scrub-clad moraines; one with yellow flowers, resembles *P. szechuanica*, the other, with chocolate flowers, very fragrant, is like *P. tangutica*. They are rather difficult to tell apart in fruit, but I secured seeds of both, more because the presence of these plants so far west is of some interest than because the plants themselves are of any value.

Arrived at the upper camp, I lost no time in collecting seeds of the small, violet-flowered, cliff Primula, which was withering in the sunshine, and on the following day I climbed the scree to 16,000 feet in order to get the lovely allied species with fragrant, mauve flowers. The Nam La (Fig. 169) is much richer in Primulas than in Rhododendrons, and indeed its flora is quite different to that of the Doshong La, which in an air line is hardly five miles away! In fact, I counted at the Nam La only between sixteen and twenty species of Rhododendron; but three of these were particularly good ones, which I had not seen at the

Doshong La. There were fifteen species of Primula, five of which are not found at the Doshong La; and six or seven species of Meconopsis. The flora of the Nam La more closely resembles that of the drier ranges north of the river than it does the flora of the Doshong La on the same range and in the next valley! So much for the far eastern Himalaya.

We spent just a week here, and I collected seeds of the curious, yellow-flowered 'Lepidotum' Rhododendron (which had seeded very badly), and of the large tree 'Roxieanum,' which I had not seen in flower. Finally, in the forest, I penetrated to a jungle of Rhododendron occupying a valley not previously visited, and secured seed not only of the deep yellow-flowered species (K.W. 6026), but also of the glorious pink 'Campylocarpum,' first seen in May. I am not quite certain about the former plant, but from the one half-dead bloom I saw on the tree in July, I take the colour to be orange. At the Nam La, this first week in November, we had our first experience of cold weather since April, the temperature at night falling to 4°F. or 28° cf frost—this was inside the tent! On the morning of November 5, we breakfasted in 21° of frost; and though there was not much snow here, it can easily be imagined that all the plants were shedding their seeds and we had to make haste.

November 6 was our last day at the upper camp, and that night, round a huge bonfire of Rhododendron logs, the Tibetans sang and danced. There was a full moon, riding in a clear sky, and 20° of frost; the towering snow-peaks all round looked in that weird light like a gigantic wedding cake. We had intended to cross the Nam La, and go down once more into Pemako, but the snow on the pass, 2,000 feet above our camp, was so deep and soft that it was not worth the risk on the unknown glaciers which had to be crossed; moreover, had we not crossed the pass in a day, and got down to the timber line on the other side—a heavy task for even lightly laden porters—there was danger of frost-bite, or even worse, during the long, bitter night. The Tibetans were certainly pleased at our reluctant decision to abandon the project—hence the song and dance; but they would as certainly have stuck by us had we decided otherwise.

As it turned out, we were right in our forecast; for we had shrunk from the adventure, not so much from the doubt of being able to cross the pass in a day, as from a fear of being shut in on the other side. On November 7, we had started down the mountain, and that very day the comparatively fine weather we had enjoyed here broke, and it began to snow heavily. By the time we reached the lower camp the snow had turned to rain, and the storm continued till November 11. Had we been at the southern side of the Nam La, we should certainly have had to stay there.

We spent three days in a little village by the Tsangpo, drying and packing seeds, and preparing for the gorge. There was much to do, and it was not till November 12 that our plans were complete, and we were able to start for Gyala, which is in the mouth of the gorge, and whence we had to draw our coolies and supplies. The storm now blew itself out, and we had five days of beautiful, sunny weather, with sharp frosts at night, before the next one came along.

We had a pleasant two days' journey down to Gyala, past villages ringed with Apple trees beaded with little, red, Crab Apples, along lanes overhung with the scarlet fruits of Euonymus and the violet berries of Berberis, by hedges tufted with the silvery shocks of Clematis and Senecio, where grew a larky Panax, twelve or fifteen feet high, crowned with bunches of black berries. The leaves of the golden and silver Poplars were crackling down, and the bare terraces—of which the soil looks desperately poor, being at least half sand—were being ploughed for the early spring crops. The houses in Kongbo have not the flat, mud roofs seen in the drier parts of Tibet, but in front of each house is a flat earthen floor, swept clean, and here the people were busy beating out the grain with flails, and sifting the chaff on the evening breeze.

Just below Pe the river breaks into fierce rapids as it passes the snow steeple of Namcha Barwa, and this is, strictly, the gateway of the gorge. The river has cut through hundreds of feet of coarse gravel and boulders, leaving great level platforms, very regularly arranged one on top of the other, on both banks; and its bed being choked with blocks of stone as big as houses, the music here begins in earnest. However, as far as Gyala, there is a good path, along which it is possible to ride a pony. The change from the comparatively dry cultivated valley at Pe to the densely-wooded gorge below Gyala is abrupt. Few flowers remained, though I noticed lingering blooms of *Ceratostigma* and the large 'Sikkimensis' Primula, beside lowly weeds on the wet lawns—such as *Potentilla*, *Dandelion*, etc. But colour was not lacking, for the massed thickets were stiff with berries,—scarlet *Cotoneaster* and *Barberry*, the glossy boot-buttons of *Jasmine*, the orange berries of *Daphne*, and others.

We reached Gyala on November 13, and



FIG. 170.—THE "HEATH ROBINSON"
HOUSE AT GYALA.

and at first it looked as though we would have to abandon the adventure, since the *jongpen* told us that he could not supply the necessary transport. We did indeed apply to a village higher up the river for assistance, but the reply came back that the people were tired after their trip to the Nam La, and having work to do in the fields, could not embark on a journey so fraught with difficulties as that which we proposed. We were at our wits end. The *jongpen* of Gyala had no power to levy coolies outside his own district, which comprised only three or four tiny villages; even so, the requisite number of coolies would have been forthcoming but for a misfortune in the summer, since our last visit to Gyala. We noticed that several of our previous coolies were missing, and on asking the reason were told that there had been an epidemic in the neighbourhood, whereby six men had died, a couple of months previously. At this crisis help arrived from an unexpected quarter. We had sent a letter to a high Tibetan official who was visiting the neighbourhood, telling him of our proposed journey, and asking him if we might take with us as guide a certain lama, who five years previously had been through the gorge. As we had met this official in the summer, and made friends with him, we expected a favourable reply. Nor were we disappointed. Not only did he grant our request, but he sent

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, August 15, September 5, September 19, October 10, and October 24, 1925.

a peremptory message to the Gyala *jongpen* ordering that worthy to supply us with such transport as we might require; for it subsequently transpired that the Gyala *jongpen*, taking alarm, had tried to double-cross us, and had secretly applied to the Commissioner, informing him of our plans, and asking whether the Tibetan Government would approve of such a journey!

The *jongpen*, therefore, in the face of these orders, promised us coolies for November 16, and they paraded early in the morning. But instead of the twenty-two strong men we had asked for, we found, of necessity, but eleven men, and twelve women and girls, this comparatively large number being required to carry the fifteen days' rations deemed the minimum of safety for our little band. Our personal kit was not excessive, eight coolies being sufficient to carry bedding, stores, botanical paper, survey instruments and collecting box; while we ourselves carried about twenty pounds of gear in rucksacks. The remaining coolies carried rations.

November 16 dawned bright and sharp, after 10° of frost, despite the fact that Gyala is not much over 8,000 feet above sea level, and forest here begins to line the gorge. The towering hump of Gyala Peri showed up very clearly on one side, and the long, shark-toothed ridge of Namcha Barwa on the other, the river roaring between. By 10.45 all was ready, and we marched out of the courtyard of "Heath Robinson" House (Fig. 170)—as the *jongpen's* leaning barrack was called—with the following strength:—Tom (sirdar); Dick, in support so far as Pemakochung; twenty-three porters, ourselves, the lama guide, two dogs, and a sheep. The "great push" had begun. F. Kingdon Ward.

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

ALTHOUGH the *Gentianella*—*Gentiana acaulis*—is a typical flower of spring, it also puts forth scattered blossoms in autumn and in mild winter weather. This commendable habit has enabled me to-day (November 7) to compare its bloom with that of the autumn-flowering *G. sino-ornata*, which is still in beauty. It is hard to say which is the finer. In form they closely resemble each other; in colour, the *Gentianella* flaunts a more intense blue, but the blue of the Chinese species is brighter and is relieved by the soft yellow, extending up three parts of each segment of the corolla, with a blue line down the middle of each stripe. It is certainly a wonderful little herb, not only for the profusion with which it flowers in the shortening days, as is well shown in the photograph of Mr. Harley's border in Perthshire (Fig. 155, p. 367), but for the remarkable ease with which it may be propagated. Every shoot taken off in September or October will strike in the open and form a nice plant before the following autumn.

It remains to be seen whether this species will continue to flower in a mass for an indefinite number of years; or whether it will form matted clumps like *Gentianella*, which we find here must be broken up every three or four years, else the flowers are not freely produced.

Although the flowers of the two species are very similar, the foliage is quite different, the broadly ovate leaves of *Gentianella* being evergreen, the linear-lanceolate leaves of *G. sino-ornata* being deciduous. Certainly the latter takes rank among the very best and easiest of plants that have been introduced of late years from the far East. A pleasing effect may be secured for October, when flowering herbs are far on the wane, by planting a bank or retaining wall with *Polygonum vaccinifolium* with a spread of *G. sino-ornata* below it. They flower simultaneously.

It is a pity that *Fatsia japonica* postpones flowering till so late in the year. Here, at least, it delays till near the end of October, thereby incurring risk of disfigurement by frost. It is well worth growing for its foliage alone, the

broadly palmate leaves being larger than those of any hardy evergreen, except *Trachycarpus excelsa*; but it is only when the great erect panicles of blossom, liked carved ivory, are expanded that a large specimen becomes entitled to the epithet "splendid." Introduced in 1839, it was long grown in greenhouses under the name of *Aralia japonica*, before it proved itself to be as hardy as the too common Cherry Laurel.

Another shrub, covered in this mid-November with a mist of small white flowers, rejoices in the pleasing name of *Boenninghausenia alliiflora*. I have read somewhere that its family name had been changed to *Ruta*, indicating its recognition as a true Rue; but in the latest *Kew Hand List* it is still dignified by the aforesaid polysyllable. It is not very clear why in the new form of that Hand Book, *Boenninghausenia* is placed among rock garden plants, whereas its near relative, the Common Rue—*Ruta graveolens*—appears under the head of Trees and Shrubs.

There are indeed rock gardens on a scale liberal enough to accommodate *Boenninghausenia*, but in those of more modest dimensions it would be apt to prove aggressive upon humbler growths, seeing that here it has formed a rounded dome four feet high and six feet across.

It is hardly worth growing the Virginian Fringe Tree in our northern latitude. The plant is perfectly hardy but flowers very sparingly, never in the profusion it displays in the United States, where it justifies its title of *Chionanthus*—the Snow Flower. Still, it has one merit even in a Scottish garden, its ample foliage remains green till all other trees, except the Himalayan White Pear, are bare, and then it turns clear yellow. *Herbert Mazuell, Monreith.*

BEAUTIFUL CLIMBING PLANTS IN RIVIERA GARDENS.

ONLY those who pass the greater part of the year in the Riviera see the full beauty of some of the finest and most beautiful of our flowering plants. Many English-speaking people reside here throughout the year, for the heat, even in the hottest parts of July and August, is quite supportable, especially by those of leisure, who can enjoy the shade in the hottest part of the day under beautiful creeper-covered verandahs, or the hospitable shade of over-spreading trees or Palms.

IPOMAEA RUBRO-CÆRULEA.

Although common, *place d'honneur* must be given to this most beautiful of all summer climbers, and no matter whether forming a shelter or screen, covering verandahs, or a poultry run, clothing all with beauty as well as giving shade, it is always delightful and gives beauty to spots which would otherwise be unsightly.

Unlike many other climbers, it adapts itself to almost any position, revelling in partial shade equally as well as in full sunshine, and may be trained to all angles. It may be cut back severely during the winter season, and once it commences its new growth it is marvellous how rapidly it spreads. As an example, the writer is sitting beneath a shelter where, since the season of growth commenced, two plants have thickly covered an area of about thirty-six square yards. Add to this luxuriance about thirty to forty fully-expanded flowers per day to each yard, each flower measuring about four inches in diameter, and the appropriateness of its popular name of Morning Glory will be appreciated. A gigantic specimen of Prickly Pear (*Opuntia Ficus-indica*) lightly intertwined with Morning Glory, the ruby-lilac flowers vying with the multitudinous yellow flowers of the *Opuntia*, is another fine picture.

Seedling freely, this *Ipomaea* is often to be seen covering various subjects along the railway banks, trailing over *Azaleas*, twining up the branches of the *Sumach*, or intertwining itself amongst the boughs of the *Caster Oil Plant*

(*Ricinus communis*) which often attains the dimensions of trees on the eastern Riviera, where the cold does not take toll of it whilst in a young state.

I often wonder why the Morning Glory is not met with more often in English gardens, for in a favourable summer it will flower most freely. I have succeeded in flowering it for several seasons in succession in England, but so soon as frost arrives it should be lifted with a ball of earth, placed in a large pot or box, and kept in a greenhouse or other frost-proof place. If started early and planted out in May or June it quickly covers a large area and fully repays with its profusion of blossom all pains that have been taken with it.

BOUGAINVILLEAS.

Many, I am sure, would give pride of place to Bougainvilleas, especially as seen round Leaulieu and the adjoining neighbourhood, where they flourish and flower more freely than elsewhere on the whole Riviera, especially at the eastern end which is known as *Petite Afrique*. *B. spectabilis* was originally the only species grown, but during later years *B. glabra Sanderiana* and *B. speciosa* have been introduced into many gardens and have become great acquirers. *B. glabra* flowers from June to Christmas, while *B. spectabilis* flowers through the winter and spring months.

Bougainvillea spectabilis lateritia, which is generally known here under the name of *B. brasiliensis*, is met with occasionally, and is a wonderful sight when well-furnished with its showy brick-red bracts. It is more delicate and slower-growing than the other kinds.

Some years ago the late Mr. W. Watson, in his report on "Riviera Gardens," described *B. spectabilis* as "The Glory of the Riviera," and a more appropriate term could not be applied to any other climber as one sees it here covering whole sides of villas, long stretches of walls, and literally clothed with myriads of brilliant bracts. The Bougainvilleas seem to adapt themselves to any kind of soil, but for depth of colour and rapidity of growth nothing seems to suit them so well as the limestone deposit between Beaulieu and Monte Carlo. The temperature is also higher in these parts.

PLUMBAGO CAPENSIS.

Flowering from July to the end of the year, this *Plumbago* is always a most pleasing sight. Being easy to propagate, it is more frequently met with than any other subject for covering pillars or verandahs, hanging over lofty walls, or even intertwining amongst other subjects. There is a light and a dark form of *P. capensis*, and, occasionally, *P. capensis alba* is used, but never with any great effect unless intermingled with one of the blue forms. F. W. Smith.

PUBLIC PARKS AND GARDENS.

A SUB-COMMITTEE of the Glasgow Parks has accepted an offer made by Miss Cranston, of tea-rooms fame, to bear the expense of having the flower beds in George Square carpeted with *Myosotis* next spring. Formerly *Daffodils* were used by themselves.

THE Corporation of Harrogate has decided to extend the Valley Gardens and to construct a children's pool.

HASTINGS TOWN COUNCIL has authorized the Parks and Gardens Committee to lay out another bowling green at the White Rock Gardens at an estimated cost of £975.

THE Ministry of Health has held an inquiry into an application by the Peole Town Council for sanction to borrow £2,215 for the purchase of land at Hamworthy for a recreation ground.

THE Ministry of Health has sanctioned to Otley a loan of £2,000 for providing a covered bandstand, three new tennis courts, a shelter near the children's paddling pool, etc.

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CORAL SPOT.

NECTRIA CINNABARINA, FRIES.

CORAL Spot has been regarded by generations of gardeners as purely a saprophytic fungus. The presence of the fungus, denoted by the bright coral red spots present on many kinds of dead wood lying about our orchards and gardens, has been looked upon with indifference. During late years a gradual change has been taking place, and Coral Spot is now regarded as a dangerous wound parasite, especially when it attacks certain plants, notably the Red Currant. In 1910, the late Mr. George Massee wrote* "Coral Spot disease (*N. cinnabarina* Fries) has usually been considered as a saprophyte, and in many instances certainly is such, covering dead branches, Pea rods, etc., with its brilliant fruits. In other instances it is certainly a true wound parasite attacking various trees, Sycamore, Lime, Horse Chestnut, and more especially Red Currants." Later, in the same book, Massee records it as being a dangerous parasite on Sycamore and states "It often follows an epidemic of leaf blotch" (*Rhytisma acerinum* Fries).

In the reports sent out by the Ministry of Agriculture on the occurrence of fungous diseases, we find that *Nectria cinnabarina* occasionally figures.† The report for 1918 states that Coral Spot had killed a number of bush Apples of the variety King Edward. This was interesting because I had never found the disease on young fruit trees. I had often noticed it on old, worn-out trees, especially Red Currant bushes, but was never quite sure whether it was old age or Coral Spot that was killing off the old trees. In the report for 1919‡, the fungus is reported as being common on the Fig, "branches being killed." In the same report the fungus is recorded as being present on Red Currants, Black Currants, Gooseberries and Plums.§ In the report covering the years 1920-21, Coral Spot was mentioned as being present on Fig, Black Currant, Gooseberry, Pear and Apple, in varying degrees of intensity.

* Diseases of Cultivated Plants and Trees, by George Massee.

† Report on the Occurrence of Insect and Fungus Pests in England and Wales, 1918. Board of Agriculture and Fisheries.

‡ Report on the Occurrence of Insect and Fungus Pests in England and Wales, 1919. Ministry of Agriculture and Fisheries.

§ Fungus Diseases of Crops, 1920-21. Ministry of Agriculture and Fisheries.

We find then that in the eleven years covered above that the disease was reported as attacking the majority of our cultivated fruit trees.

During the past few years I have seen this troublesome disease, in its parasite form, on three different kinds of host plants, namely, Gooseberry, Red Currants and Pear. On visiting a garden in the spring of 1921, my attention was drawn to a couple of Gooseberry bushes and one Red Currant bush that were standing dead in the garden. The wood of the bushes was covered with the beautiful coral spots, or fructifications of this disease.

Several other bushes standing in the same bed showed signs of disease; a branch here and there bore wilting, or yellow leaves, on one or two of these branches the pustules were just beginning to push through the bark, and in some cases were showing the well-known coloration of Coral Spot. This gave me another link in the chain of evidence; previously I had only found the disease showing itself on wood that was dead, but here I had a case where the disease was showing itself on wood that was not yet quite dead. The garden was visited two years later, and I found all the bushes had been grubbed because so many had died out.

In 1923, another garden was visited, and the owner complained that numbers of young cordon Pear trees on a south wall were not doing well. Examining the trees indicated, I found most of them to be badly affected with *Nectria cinnabarina*. The disease had evidently gained an entrance through the spurred-back laterals; these were looking unhealthy and covered with the familiar coral spots. On cutting sections through the spurs it was found that, after pruning, the wounds so made had never healed. Decay had set in and worked its way back to the main stem and had in some cases gone right into the main stem. I tried to find out when the Pears had been pruned, but could not, because the owner had only recently acquired the garden.

From the evidence I have been able to collect it appears that this fungus is always a wound parasite. If this is so, it would partly explain why Red Currant bushes are so prone to the disease. When the laterals on a Red Currant are pruned they never heal well; they generally die back, at least a little, and this "die back" forms a good starting place for Coral Spot. Most other fruit trees heal up their pruned surfaces more or less quickly, and are thus less prone to attack.

Where Coral Spot is troublesome all dead wood bearing the well-known spots should be burned, and not allowed to lie about in odd corners of the garden or orchard.

Pruning of all kinds should be carried out early in autumn, or delayed until as near the movement of sap in the spring as possible. At either of these times wounds made in pruning would not remain unhealed long. Wounds made in winter do not heal until the spring, and so remain open to the attack of any wound parasite that happens to be about. *Scomersset.*

BULB GARDEN.

SOME LESSER-GROWN BULBOUS PLANTS.

(Continued from page 386).

FRITILLARIA.

THE Fritillarias comprise a family of very elegant hardy plants, bearing graceful, drooping, bell-shaped flowers in April and May. The large-flowered varieties are excellent for growing in borders, or as clumps in the rock-garden, while the members of the *Meleagris* section are very effective naturalised in grass under trees.

The stately Crown Imperial, *F. imperialis*, is frequently seen in a flourishing state in cottage gardens, and is worthy of wider planting in shrubberies and borders. The Crown Imperials are essentially bulbs for the hardy plant lover, and when once established, thrive with little attention for a number of years without disturbance. There are several varieties in red, yellow and orange shades.

F. armena is a charming little species from Asia Minor, with small, rich, yellow flowers

which appear in April. It is an ideal plant for making small clumps on rockwork where its rich colour is striking.

F. coccinea is a remarkably showy species and its handsome red flowers with recurving petals make it particularly attractive. *F. recurva* is a small but very beautiful Californian species, bearing graceful orange-scarlet, drooping bells. It should be grown in a warm, sunny position at the foot of a south wall.

FUNKIAS.

The Plantain Lilies recommend themselves rather as foliage plants than for floral display. They are good subjects for the front of the border, where the soft tones of their foliage are valuable. They are also suitable for the waterside, and partially shaded positions in the front of shrubberies, but they should not be planted in positions exposed to winds or the delicate leaves will become shredded and discoloured.

F. Sieboldiana major has large, handsome, glaucous foliage, and bears violet-blue flowers in July and August.

F. subcordata grandiflora has much smaller leaves of soft pale green. The snow-white flowers produced in August and September are deliciously fragrant.

GALTONIA CANDICANS.

(syn. *Hyacinthus candicans*).

This is a most decorative subject, and grows and flowers freely in a warm border. Its pure white, bell-shaped, fragrant flowers are borne on stems which, under good conditions, reach a height of four feet or five feet. On light soils, the bulbs may be left in the ground for several years, but deep planting is advisable.

TIGRIDIA.

Few flowers are so quaintly beautiful and interesting as the members of this genus of bulbs which make a gorgeous display during July, August and September, and although the individual flower is short lived, this is compensated by a succession of blooms. A light, sandy soil and a sunny position are the essential factors for successful cultivation out-of-doors, and it is safer to lift the bulbs when ripe, and store them in sand in a cool place than to leave them in the soil all the winter.

T. conchiflora has yellow petals and cup, heavily spotted with scarlet. *T. grandiflora rubra* has rich scarlet petals with cup spotted crimson on a yellow ground, and *T. g. Ruby Queen* has large, handsome flowers of a beautiful soft ruby-rose.

TRILLIUM.

The so-called Wood Lily or Trinity Flower is a genus of North American plants of distinct appearance which thrive in moist, shady nooks in the ordinary garden, or in similar positions in the rock garden. They make luxuriant foliage, produce beautiful, large flowers from April to June, and should be planted freely in every garden. The bulbs should be planted in autumn and left undisturbed for a number of years.

T. grandiflorum, with large, snow-white flowers set amidst pretty foliage, is the most popular species, but *T. sessile californicum*, with creamy-white flowers and spotted foliage; *T. recurvatum*, with prettily recurved, purple flowers and marbled foliage, and *T. stylosum*, with pretty, bright, rose-pink flowers are all worth growing.

VALLOTA PURPUREA.

The so-called Scarborough Lily is a most valuable autumn-flowering, *Amaryllidaceus* Cape bulb suited to a warm, sunny border. A narrow border, antequous to a greenhouse and facing south or west, provides a good position for the cultivation of this handsome plant, as the slight heat radiated from the greenhouse tends to promote an equable soil temperature.

STERNBERGIA.

These little-known bulbs produce handsome, Crocus-like flowers and are extremely useful. They thrive best in a warm, sandy loam in a sunny situation.

S. Fischeriana bears clear yellow flowers in early spring, and is suitable for planting in sunny spots in the rock garden. *S. lutea* is an effective autumn-flowering species, and some good patches brighten the garden at that season. *S. macrantha* is also autumn-flowering, its season following that of *S. lutea*. *W. Auton*.

(To be continued.)

ERYTHRONIUM GRANDIFLORUM.

Few hardy plants are more delightful than some of the North American Dog's Tooth Violets, most of which are of perfect hardiness in our climate, and constitute attractive features of the garden.

Erythronium grandiflorum is a popular and very beautiful species, which comes from the mountains of Washington, Idaho and other American States, and which has been

nook in the rockery or in a prominent position near the front of the border. Propagation is effected by seeds and offsets. There are a few varieties, but not many of these are obtainable under distinct names. *S. Arnott*.

PLANTS NEW OR NOTEWORTHY.

AMARCRINUM HOWARDII

This interesting bi-generic hybrid (Fig. 171) has flowered at Kew and the flowering bulb is growing in a warm south border, in front of one of the plant houses. This beautiful plant was raised by Mr. F. Howard, Los Angeles, California, and I cannot do better than quote the raiser's description: "Among the various novelties resulting from our work in the cross-breeding of plants, we consider this as being

large bulb has produced one flower scape some two feet in height. The first flower opened on October 20, and on October 29 there were twenty open flowers and buds on the umbel. The beautiful pink flowers have retained some of the fragrance of the seed parent, also the shape of the flowers, although there is a distinct curve in the lower portion of the perianth tube, reminding one of the pollen parent. So far the plant has proved evergreen, and the long neck to the bulb and the arrangement of the leaves distinctly indicate the pollen parent, *Crinum Moorei*.

There seems no reason why this plant should not prove as hardy as the two parents are in favoured situations in this country, that is, in warm south borders as the foot of a wall. It remains to be seen whether it attains in this country the dimensions that it does in the more favoured climate of California.

Amarcrinum Howardii is interesting as it is



FIG. 171.—AMARCRINUM HOWARDII.

in cultivation for a good number of years. It has not the distinct marbling or mottling of the leaves which is such a noteworthy and charming feature of some of its allies, yet it is so lovely when it blooms, generally in March or April, that it receives almost universal admiration.

The height of the plant is usually given as six inches, but I have had it taller at the base of rock work, and in one position, where it spread through and flowered above a carpet of *Vancouveria hexandra*, unfolding its tender foliage about flowering time, it was truly delightful. The leaves are oblong-lanceolate, and the golden-yellow flowers, about two inches across, are prettily recurved, as in the manner of the *Erythroniums*.

The tubers should be planted in loam and leaf-mould mixed with a little sand. The top of the tuber should be covered with soil to about the same depth as the length of the tuber; two inches is a good average depth. A little shade is preferable to a hot position fully exposed to the sun, as the blooms last longer there than in sun. I prefer to grow it in a sheltered

easily the most remarkable of our productions. It is a true bi-generic hybrid, of which there are but comparatively few in existence. It is a true cross of *Crinum Moorei* on *Amaryllis Belladonna*, the latter being the seed-bearing parent. The value of this new plant lies in its usefulness as a bulbous plant for growing in pots or for planting in the open garden. Its beautiful soft pink colour, the immense trusses of bloom which it bears, combined with the lasting character of its flowers, place it in a class by itself. Stems four feet long, with immense heads of bloom, suitable for vases, etc., are freely produced throughout the summer and autumn months. The tone of soft pink to be noted in its flowers is one that is rarely seen and will appeal to everyone."

Kew is indebted to Mr. T. Hay, Superintendent of Hyde Park, for two plants, these being part of a small consignment received from the raiser, Mr. F. Howard, last autumn.

The Kew plants were placed in pots, kept in a cool house all the winter, and planted out in their present position during the spring; one bulb was small and has not flowered; the

the first *Amaryllis* cross that distinctly and at a superficial glance shows its hybrid origin. In *The Gardeners' Chronicle*, 1921, p. 32, there is a note and figure of a similar cross called *Crinodonna Memoria Corsii*, raised and named by Dr. Attilio Ragionieri, and the parentage is given as *Amaryllis Belladonna* × *Crinum Mooreanum* (C. *Moorei*?). I think the name *Amarcrinum* is preferable and should stand, because it gives a better idea of the parentage than does Dr. Ragionieri's title of *Crinodonna*, seeing that *Amarcrinum* embodies the two genera concerned.

In the *Amaryllis* × *Brunsvigia Josephinae* crosses there is little trace, superficially, of *Brunsvigia*, except in the spreading umbel and increased number of flowers; this is rather surprising considering how distinct *Brunsvigia Josephinae* is. Readers interested in this subject will find some interesting references to the supposed *Amaryllis* crosses in the pages of *The Gardeners' Chronicle* for 1850, July 27, p. 470; January 23, 1909, p. 57, February 6, 1909, p. 92, and in Mr. Worsley's interesting communication in the issue for Nov. 14. J. Coutte.

INDOOR PLANTS.

LAGERSTROEMIA INDICA.

It is rare, even in this most favoured part of the Riviera (Eze-sur-Mer), to find a really fine tree of this, one of the most beautiful of all flowering trees of foreign origin. Several times, whilst travelling between Nice and Beaulieu, I had occasion to notice a very fine tree near the railway, but too far away to enable me to determine what it was. At first appearance it resembled a giant, shrubby Spiraea. Recently, I discovered, to my surprise, and delight, it was a tree of *Lagerstroemia indica*, twenty feet in height, and nearly as far through, laden with large panicles of blossom, many of which were over a foot in length of the richest glowing pink, the beautifully undulated petals enhanced by the delicate lemon-tinted stamens of the newly-opened flowers. I have succeeded in flowering this species indifferently in England on two occasions, but I have reason to believe that greater success might be attained by allowing it a long season of drought and rest, then pruning it hard back and starting it again in strong bottom heat. This would ensure quick, vigorous growth and a longer season for ripening the wood. Full sunshine is essential. *F. W. S.*

LAPAGERIA ROSEA.

THIS one-time popular greenhouse twiner grows luxuriantly under cool and moist conditions. Many will remember the fine display made by plants of this *Lapageria* on the back wall of the Odontoglossum house in Trentham Gardens.

Lapageria rosea is all but hardy, indeed, in districts so far north as Ross-shire it may be seen flourishing on walls out-of-doors in sheltered gardens, but the adverse climatic conditions prevailing at the time of flowering during late autumn are against its more extended outdoor cultivation. There are many forms of the species, and some of the best of these have received distinctive names. The solid, waxy flowers of *L. r. alba* are in demand for wreath-making and floral designs.

The roots are best confined to a border of moderate width, otherwise the strongest growths will appear at some distance from where they are required to be trained.

Lapagerias seed freely, but for the propagation of the best varieties, layering is recommended. Slugs are very persistent in searching for and devouring the young growths and must be kept in check. *Fred W. Jeffery, Dalserf.*

IMANTOPHYLLUM.

IMANTOPHYLLUMS or *Clivias* are invaluable as decorative subjects indoors and the plants are not exacting in their requirements. Of the four or five species in cultivation *I. miniatum* is the one most generally cultivated. This species produces large umbels of flowers, and there are varieties with colours ranging from blood red to pale apricot. The plants thrive in a rich, sandy loam, and should be grown in an intermediate temperature, although they will succeed fairly well in an ordinary greenhouse.

An annual repotting is not necessary, every third or fourth year being sufficient for established plants, and the operation is best carried into effect immediately after flowering.

Imantophyllums are gross feeders and during the summer respond to frequent applications of liquid manure; clarified soot water is also an excellent stimulant.

The free use of the syringe is indispensable, and cleanliness must be strictly maintained, the plants being exceedingly prone to attacks of mealy bug.

While not requiring a rest in the accepted sense of the term, less moisture is required during the winter, and watering should be done with great care; during the summer season it is difficult to over-water an established plant.

Clivias force easily, and a succession of flowers may be obtained over a considerable period. Propagation is effected by division and seeds; seedlings usually flower in their third year. *Ralph E. Arnold.*

MESEMBRYANTHEMUM.

(Continued from page 273.)

KEY TO THE GENERA.

[N.B.—As this key only includes genera founded upon such material as I have been able to investigate, it must be understood that there still remain under *Mesembryanthemum* species that do not conform to the characters of any genus as here defined, and which I believe will ultimately be removed from that genus.]

Also, as it may happen that cultivators and others using this key will desire to discover the genus of some particular member of this group of plants that has neither flower nor fruit upon it, I have endeavoured to make this achievable, so far as I am able to do so, by giving particular prominence to the vegetative characters, and have contrasted them throughout for that purpose. There are some genera, however, such as *Nananthus*, *Erepsia*, *Aridaria*, *Dolosperma*, and *Mesembryanthemum* that cannot be distinguished by their vegetative characters alone. Many genera, when in leaf only, will, I think, be readily recognised by a careful perusal of the characters given, and when once recognised by their habit and appearance other unknown species can readily be referred to them. Where the word "apparently" is used it indicates that I have only seen dried or withered flowers.]

A. Annuals with flat, linear, terete or semiterete leaves, or perennials with flat and thin leaves only. To end of paragraphs under 12.

1. Leaves either all alternate or the lower opposite and those on the flowering branches alternate, sometimes mingled with a few that are opposite; calyx produced above its union with the ovary into a short tube or cup; petals united into a short tube at the base; ovary partly superior, 4-5-celled; placentas on the central axis

Leaves all opposite

2. Capsule (when expanded) with 5 erect bifid valves, giving it the false appearance of being 10-valved. Annual with prostrate, very watery stems and branches 4-6 lines thick; leaves very stout, terete

19, *Hydrodea*

Capsule (when expanded) with 4-5 entire, spreading or reflexed valves. Annuals with flat or subterete and then not very stout leaves

17, *Cryophytum*

3. Ovules and seeds arising from the central axis

Ovules and seeds arising from a placenta down the middle of the outer wall or floor of the cells; flowers solitary; ovary inferior; capsule opening by valves having contiguous or closely parallel expanding keels

4. Fruit inferior, indehiscent, without valves, 1-celled; seeds large, flat and broadly-winged all round, arranged in a single whorl around the central axis. Annuals with radical flat leaves

Fruit (and ovary) partly superior or rarely wholly inferior, 4-5-celled, opening when wetted by 4-5 spreading or reflexed valves, with their expanding-keels (except perhaps in 20, *Platythyra*) closely contiguous so as to form one central acute keel; cells open, without cell-wings or with a tubercle at the opening; seeds small, not flat nor winged, irregularly arranged in the cells; two calyx-lobes often much larger than the others and leafy

5. Style either none or very short and the 8-12 stigmas long and filiform, or the style rather long and slenderly conical with several (7 or 8?) minute linear stigmas at the apex

28, *Thyrasperma*

Style funnel-shaped, somewhat membranous, with 9-12 papilla-like stigmas on the surface of its rim

29, *Hymenogyne*

6. Leaves flat and more or less distinctly petiolate or much narrowed into a sort of stalk at the base

Leaves sessile

7. Flowers solitary and axillary or in the forks of the branches; stigmas and valves of the fruit four

Flowers in terminal cymes or cymosely arranged; leaves often very large. Annual or biennial plants

17, *Cryophytum*

8. Leaves ovate-lanceolate or lanceolate; calyx produced above the ovary into a short tube; stigmas stout; valves of the capsule with inflexed marginal flaps forming pockets, and with the expanding-keels thin, deep and toothed

20, *Platythyra*

Leaves cordate; calyx lobed down to its union with the ovary; stigmas minute; valves of the capsule without wings or flaps, and their expanding-keels neither thin and deep nor toothed

21, *Aptenia*

9. Leaves flat, broader than thick; flowers terminal and solitary or in few or in many-flowered cymes

10

Leaves subterete or semiterete, not or scarcely broader than thick; very dwarf erect annuals with distinct internodes between the leaf-pairs and terminal solitary or cymose flowers; stem and leaves stout and probably pulpy

24, *Opophytum*

10. Perennials; leaves under natural conditions withering to a skeleton and persisting, several times broader than thick; valves of the capsule without wings or flaps

22, *Sceletium*

Perennials; leaves not withering to a skeleton, moderately thick in proportion to breadth; valves of the capsule with large erect or inflexed flaps

18, *Prenia*

Annuals, leaves not withering to a skeleton, many times broader than thick; valves of the capsule with inflexed flaps

23, *Synaptophyllum*

11. Annuals; leaves more or less flat and petiolate or linear-terete

12

Perennials; leaves sessile, lanceolate or linear-lanceolate; stigmas and cells of the ovary and fruit 5; capsule with the expanding-keels of the valves with membranous marginal wings at their apical part; cells open, no cell-wings or tubercles

38, *Dolosperma*

12. Stigmas and cells of the ovary and fruit 5; capsule with the expanding-keels of the valves ending in broad membranous wings; cells open, without cell-wings or tubercles

30, *Cleretum*

Stigmas and cells of the ovary and fruit 12-20; valves of the capsule with the expanding-keels ending in awns; cells roofed with stiff cell-wings, without a tubercle at the narrow opening

27, *Carpantaea*

B. Plants all perennials, except perhaps one species of 26, *Conicosia*, which may be biennial or of short duration, and one species of 42, *Erepsia*, which may be annual; leaves terete, semiterete or 3-angled, rarely flattened and then rather thick and fleshy, never flat and thin. To end of key.

13. Plant or each division of it without separate spreading leaves, and consisting of a small-fleshy body, entire, notched or with two separate or contiguous lobes at the top, or with a closed cut-like fissure at the top or on one side, separating the two short thick and obtuse leaves of which it is composed and which normally only separate when making a new growth or in flower; plants usually stemless or nearly so; placentas down the centre of the outer wall or floor of the cells of the ovary and fruit

14

Plants with distinct, separate, erect, ascending or spreading leaves, only in 8, *Cheiridopsis* do the resting or younger pair of leaves persist for any length of time with their flat faces closed together, and then are acute and resemble the beak of a bird

18

From 13. Plants all with distinct erect, ascending or spreading leaves (to the end).

14. Cells of the capsule open, without cell-wings; stigmas and cells of the inferior or partly superior ovary and fruit 4-7

Cells of the capsule roofed with cell-wings; calyx without any tube above the ovary, which is always inferior, with 6-15 stigmas and cells

15. Ovary and fruit inferior

Ovary and fruit partly superior. Each body or division of the plant ovoid or cylindric-ovoid with a small fissure at the apex, minutely papulose; calyx with a very short green tube above the ovary; petals apparently united into a very short tube at the base

2, Oophytum

16. Calyx with a distinct membranous tube above the ovary; petals united below into a distinct tube. Each body of the plant globose, obconic, ovoid or oblong, entire, notched or distinctly 2-lobed at the top, with a small closed orifice at the centre of the top or between the lobes, not papulose

1, Conophytum

Calyx lobed down to its union with the ovary (no tube); petals free. The plant or each division of it somewhat obconic, flat or slightly convex at the top, with a transverse fissure all across it (when adult), dividing it into two short truncate lobes

3, Lithops

17. Calyx subequally 5-9-lobed; petals free; stigmas and cells of the ovary 8-15. Each plant or division of it globose, obconically sub-globose or oblong-ovoid, formed of two short, thick equal or sub-equal leaves with their flat faces closely pressed together and separated only by a cut-like fissure, not dotted or otherwise marked

4, Rimaria

Calyx subequally 6-lobed; petals free; stigmas and cells of the ovary 6-7. Each division of the plant either ovoid or obovoid and slightly notched on the top, or obliquely or conically-ovoid or sub-cylindric with a closed mouth-like fissure on one side of it.

5, Gibbaeum

18. Seeds and ovules arising from a central axis, not flat nor winged, fruit partly or nearly superior, opening when wetted by 4-5 valves, and with 4-5 open cells without cell-wings or tubercles; petals united into a short tube at the base

Seeds and ovules arising from a placenta down the centre of the outer wall or floor of the cells, or in the genera 6, *Argyroderma*, 11, *Punctillaria* and 12, *Glottiphyllum*, also from the basal part of the central axis, not flat nor winged; petals mostly free, but in a few genera united into a tube at the base

19. Leaves all or many of them (at least on the flowering branches) alternate

Leaves all opposite

20. Leaves with a distinct closed tubular sheath embracing the stem

Leaves without a tubular sheath

21. Stem very short and completely concealed by the stout leaf-sheaths that clasp it; leaves 2 to each growth, pulpy, terete, 4-6 lines thick; petals stiff

13, Dactylopsis

Stem evident between some of the leaf-sheaths, erect, 4-6 inches long, with more than two alternate and opposite leaves spaced along it; petals not stiff

14, Aspazoma

22. Plants with distinct, erect, decumbent or prostrate stems or flowering branches

Plants quite stemless; rootstock tuberous, leafless part of the year; leaves terete; flowers subsessile or very shortly pedicellate

31, Phyllobolus

N. E. Brown.

(To be continued).

A HISTORICAL NOTE ON SOME POTATO VARIETIES AND BREEDERS.

(Continued from page 393.)

In Britain the variety Up-to-Date has been widely cultivated under other names. It largely supplanted Magnum Bonum. The date of its introduction to the British market is 1893. In the following year, another variety of great merit appeared, viz.: British Queen, which was derived from the same plum as Up-to-Date. These two successes, but especially the former, paved the way to the period of the great Potato "boom" in the first few years of the present century. For a single tuber of Eldorado a price of £100 was paid, and the breeder was offered £200,000 for the complete stocks of this variety. Much excitement was caused also by the appearance of such varieties as Northern Star (1902), which was sold at £25 per tuber. Royal Kidney appeared in 1901. Majestic was placed on the market about 1917. This variety, along with K. of K., was stated by the breeder to be a cross between a wild species of *Solanum* and one of his own hybrids, probably British Queen. Before leaving the productions of Mr. Findlay a word or two may be written about Jeanie Deans, which was placed on the market in 1890. Regarding it, Mr. Findlay states: "In 1890, I was able to offer Jeanie Deans and Early Beauty out of what I may call a double Scotch-American cross,—first cross Beauty of Hebron and Victoria; second cross, seedling of and natural seedling out of the Old Scottish Blue Don." It is remarkable that here again the variety is similar in appearance to one of Clarke's viz., Sutton's Abundance, and the two names are classed as synonymic in the official publications. This may be merely a coincidence, and the explanation the same as that offered for the Bruce.

Nicol, Arbrouth. Nicol's claim to attention rests on the fact that he produced the Scotch Champion, which is still largely grown in the Highlands and in Ireland. Champion, according to Findlay,* was a natural seedling of Victoria, and is in consequence closely related to Langworthy. It would appear that the variety is also grown extensively in Malta.

Wm. Sim, Greenmyre, and Gourdas, Fyvie, Aberdeenshire. The Duke of York Potato raised by this breeder, has become extensively cultivated, not only in England but on the Continent. It was, according to Fisher, the result of a cross between Early Primrose and King Kidney, being introduced in 1891 by Daniels Bros. It is the principal Early Potato of Holland, where it is named "Schotsche Muis" or "Erstelingen. In the Rhineland it is known as "Erstling."

W. Kerr, Dumfries. It is not known definitely to whom the credit of raising King Edward should be given, but generally Kerr has been accepted as the raiser. The variety was introduced by a Mr. Butler, in the North of England, during the first few years of the present century. The parentage of King Edward is not known. It is extensively cultivated in Britain, and to some extent on the Continent. In Westphalia it is known as "Bunte Mölle."

J. Brown, Peashill Farm, near Arbrouth. As in the cases of Nicol and Sim, this breeder's reputation rests on one variety only, viz., Golden Wonder, which appeared in 1906. In all respects it is similar to Clarke's Maincrop, with the exception that the tuber skin is russet. Brown certainly deserves credit for selecting the variety, but it is to be presumed that it is just a russet variation of the former.

Dr. J. H. Wilson, St. Andrews. Dr. Wilson produced and placed on the market a number of varieties. His great object was to obtain blight resistant forms, and for this purpose he utilised some of the wild species of *Solanum* in his crossings. None of his varieties has, however, become very popular. The most

prominent are Rector, Bishop and Templar. Rector was the result of a cross between an unidentified red variety and Maincrop. The parents of Bishop were Up-to-Date and Rector. Bishop was raised from seed in 1906. Templar, which was raised in the same year, was produced by crossing Rector with Myatt's Kidney.

D. McKelvie, Lamash, Arran. Mr. McKelvie is undoubtedly our best known present-day breeder. He has already produced a number of varieties of outstanding merit, including Arran Chief, Arran Victory, Arran Comrade, Arran Rose, etc. However, his work is not yet finished, and several of his most recent seedlings show promise of developing into high-class commercial varieties. Mr. McKelvie commenced Potato raising in 1907, when he received several packets of seed from F. W. Keay, Ox Barn Farm, Merry Hill, Wolverhampton. From this seed Arran Chief and Ally were raised. The pedigree of Arran Chief is indefinite, but the pollen parent was Flourball, which variety Mr. McKelvie subsequently utilised much in crossing. Arran Chief was introduced in the Autumn of 1911. The Ally was first named Arran Treasurer, but owing to its very bad table quality Mr. McKelvie himself did not introduce it. In the spring of 1914, the stock of this variety was shared with several merchants, including Messrs. J. R. Poad, W. J. Reed, J. Donald, T. Mossom, and J. Bettinson, who named it Ally, and introduced it. Arran Comrade was also raised from seed supplied by Keay, but its pedigree is obscure. It was raised in the spring of 1912, along with Arran Rose, and introduced in the spring of 1918. Arran Victory also was raised in 1912 and introduced in 1918. It was grown from a seed taken from a plum of an unknown variety. Arran Consul, introduced 1924, was the result of a cross made by Mr. McKelvie between Flourball and President.

Messrs. Farish, Tinwald Perfection, which was placed on the market in 1916, was raised by Mr. W. B. Farish, Dumfries, who had previously introduced Lochar in 1909. Rhoderick Dhu was raised by Mr. S. T. Farish. Todhillmuir, Lockerbie, and was marketed for the first time in 1920. The parentages of Messrs. Farish's varieties are not known, some mixing having apparently occurred at seedling time.

A. Mair, Meikle Holm, Lockerbie, and A. W. McAlister, Dumfries. These two names will ever be associated with the Potato named Great Scot, which, because of its immunity to wart disease is probably the best introduction since Up-to-Date. Great Scot was raised from seed supplied by Mr. Ezra Miles to Mr. Mair, who sowed it. Mr. A. W. McAlister assisted Mr. Mair in selecting what he thought to be the best seedling. Mr. Miles states that the seed from which Great Scot was obtained was the result of crossing either Schultz Lupitz or Imperator with Champion. It was placed on the market in 1909.

Messrs. Dobbie and Co., Edinburgh, and Mr. Henry, Cornhill, Banff. To Messrs. Dobbie must be ascribed the credit of putting Kerr's Pink on the market. The variety was raised by Mr. Henry, and its merits were first recognised by Mr. Kerr, of Banff, from whom the above firm purchased it. It was first introduced in 1915, but it had been in Messrs. Dobbie's hands for the two previous years. Its immunity to wart disease and its general merits have won for it an outstanding place amongst Potato varieties. Messrs. Dobbie deserve great credit for their early recognition of the merits of this variety, which are only now acknowledged by the public. Official statistics show that its popularity is on the increase. The parentage of Kerr's Pink is obscure. It is stated to be a cross between Lord Rosebery and Crofter.

CONTINENTAL INTRODUCTIONS OF NOTE.*

1.—*President Kruger.* (President). This variety was produced by Cimbäl, Germany as the result of a cross between Daber and Erat Von Frömsdorf. It was placed on the market

* A. Findlay. *The Potato, its History and Culture*, 1906.

† *Trans. H. and A. Society*, 1916.

* Dr. K. Snell. *Kartoffelarten*, 1925.

n 1900, and had a considerable vogue. The appearance of wart disease, however, had much to do with its waning popularity. General is a white flowered variation of President.

2.—*Juli* (Immune Ashleaf), was raised by Paulsen in Germany. Its parents were Josef Regault and Pfluckmans. It has been in commerce since 1891, and very largely owes its popularity to its immunity from wart disease and its earliness.

A number of older breeders have been omitted from this discussion because their varieties are not considered to be of such importance as to justify their inclusion. Some present-day workers have also been excluded, perhaps wrongly, as it is difficult to obtain a correct perspective of current productions. Again, a few important varieties have not been treated, because information concerning them is not available at present. *T. P. McIntosh.*

NOTICES OF BOOKS.

Practical Fruit Growing.*

As an introduction to the subject of fruit culture for market this book will be read with interest by beginners, but it does not go into detail sufficiently to be of much service as a guide to practical operations. It suffers from the attempt to cover too wide a field in a limited space.

The culture and marketing of tree fruits, bush fruits, Strawberries, Nuts, and such out-of-the-way subjects as Apricots and Figs, are dealt with in the space of 189 pages of rather large type, which naturally results in giving little more than an outline. For example, on the important matter of the preparation of the land for planting, the need for deep cultivation is emphasized, but it is not stated what implements are to be used or how the work is to be done. Again, a strong point is made of the importance of having the trees on the right stocks, and a good many of these are briefly described; but at the end the reader does not gain a clear impression as to which stocks the author recommends for each particular purpose.

In the section on pests and diseases valuable space is wasted on troubles which are not of sufficient importance to concern growers very much. Bitter rot, for instance, for which, in a season favourable to the disease, it is stated that it may be necessary to spray Apples with Bordeaux mixture every fortnight from the bursting of the buds to the ripening of the fruit!

In spite of these and other faults there is a good deal that is sound in the book. The vexed question of grading is summed up very fairly as follows: "It is a fact that, while the man who carefully grades his fruit does reap an advantage, careful packing does not always turn an unprofitable crop into a profitable one. If careful grading were the only obstacle in the way of making a profit from the fruit, it is safe to say that ninety per cent. of the growers would at once become first-class graders. High cost of production is rather the cause, not only of the difficulties of growing at a profit but also of trying to save in every way possible, and it is to some extent the cause of lack of care in grading. In spite of this, however, it is well worth while to grade carefully and market as carefully."

The modern practice of running pigs or poultry under fruit trees has not been overlooked by Mr. Morton, who has a good word to say for poultry, not only because they destroy many insects pests, but also because, in his opinion, they influence the size and especially the colour of the fruit. Where poultry is run in an Apple orchard it has been found that, not only is the same high colour obtainable as where the trees are grown in grass, but the Apples are as large as those grown on cultivated land. He considers also that poultry manure is particularly valuable to Plums, increasing the size of the fruit as do few other manures.

* *Practical Fruit Growing*, by J. W. Morton. Published by Ernest Benn Ltd. Price 10 6 net.

VEGETABLE GARDEN.

THE CABBAGE.

(Concluded from page 394.)

Of foreign varieties, a few have by sheer merit forced their way to the front in our lists. The most important are:—*Danish*—Copenhagen Market, R.E., and Emperor or Ballhead, D.L.; *Dutch*—Enkhuizen Glory, R.E.; *French*—Christmas Drumhead, D.E.; Etampes, C.E.; Express, C.E.; and Primo, D.E. *German*—Brunswick, D.M.; Schweinfurt, D.E.; and Winnigstadt, C.E. *American*—several grand sorts, which will be more fully referred to in a special article later.

The value of the Cabbage is the more remarkable as an article of food because in one or other of its various forms the entire plant is eaten. The root in the form of Swede and Turnip-rooted Cabbage is a valued winter vegetable: an edible stem is furnished by Kohl Rabi and Marrow-stem Kale; the head, leaves and stems of Cabbage and Kales are articles of every-day consumption; the flowers are served up in the form of Broccoli and Cauliflower, and as regards the seeds the birds get their full share, while such of it as is ground into cake provides valuable food for sheep.

That this food is both nutritious and cleansing goes without saying, its value is recognised by every sheep farmer and stock breeder, and every poultry farmer knows the health-giving properties of the fresh Cabbage leaf to his broods. As an article of diet for man the value of Cabbage is often spoiled. To the writer, after an experience in many countries of more than fourscore years, the fault lies not in the food, but with the cook. Soups and entrees occupy the first place in the mind of the lady of the kitchen, but too often in our country the humble Cabbage is relegated to the scullerymaid, and the result in many homes, in the restaurants of the rich and the cookshops of the poor, the vegetable comes to the table a sodden, indigestible, half-cooked mass, heavily charged with soda.

Realising the justice of the foregoing criticism, the Editor of *The Vegetable Garden* states:—"The Cabbages are by far the most precious vegetables we have, when eaten young, in the right season, and well-cooked. This vegetable in its wondrous variety is better fitted for our country than for any other, and comes to greatest perfection in it. To despise it and to neglect it is a mistake and a loss. The question of cooking is undoubtedly of paramount importance. . . . It may therefore not be out of place here to give a few indications as to the way Cabbage is usually cooked and used in France. 1st. As a Soup (*Soupe aux choux*), the head of a Cabbage or of a Savoy is freed of its outer leaves, cut in two or four, washed and placed in cold, salted water on the fire, adding a few Carrots, Turnips, Potatos, and a fair-sized piece of bacon or ham. Let boil slowly at least three hours. 2nd. As a vegetable, the head is cut into small pieces, washed, put in boiling, salted water, on the fire, and cooked for half-an-hour, then placed in a strainer. Cook sausages or lean bacon cut in small pieces, and when done add to the Cabbage, and let all simmer slowly together until the time for serving. 3rd. As a garnishing, take only the white heart of some Cabbages, cook for half-an-hour as above, strain, mince and place in a stewpan with butter and a little broth, and let simmer slowly until time for serving."

And now after having found the Cabbage in the garden of that world-famous epicure, Theophrastus, who lamented the shortness of human life in his one-hundred-and-seventh year; and having traced some of its history and developments down the ages that have intervened, selected the choicest variety at present in existence, and had it capably cooked and served, the writer thinks it is high time to leave it to its fate. *S. B. Dicks.*

CORN SALAD OR LAMB'S LETTUCE.

(*VALERIANELLA OLITORIA*, MOENCH)

French: *Mache*. German: *Feldsald*.

Those who love a mixed salad and regard Corn Salad as one of its most acceptable constituents should remember that September is the closing month for sowing the seeds in any one year. The plants grow so readily, if fully matured seeds are sown, and require, practically no attention beyond the indispensable weeding, that no one who possesses a garden on which sun sometimes shines, anywhere south of the Trent, need be without it. The great value of being able to pull the leaves fresh from one's own garden, applies specially to this somewhat delicate plant, which does not take kindly to the market grower's basket or the greengrocer's shop window. This partly accounts for the fact that, as a rule, it is not very much in evidence, for as Messrs. Vilmorin point out in *The Vegetable Garden*: "The whole of the plant is used as a salad and an excellent and distinct salad it is, far too little used in England. This forms, with the outer stalks of Celery, one of the best mixed salads."

The common variety is a native plant; an annual, which from seeds sown in the autumn flowers and develops its seeds in the following spring and summer.

The old herbalists dwell more upon the variations in the different Valerians and their medicinal virtues, which consists mainly in their value as a diuretic, than upon their uses as an article of food. Phillip Miller enters fully into both sides of the question and gives descriptions of twelve Valerians, including the common and the Italian varieties. The following is taken from the seventh edition of his famous *Dictionary*, 1759: "The ninth sort is the Common Corn Salad which is cultivated in gardens, but is found growing naturally upon arable land amongst the corn in many parts of England. This is an annual plant which dies when it has perfected its seed . . . the seeds which ripen in August, are very apt to drop before they have changed their colour. It is propagated as a salad herb for the spring, but having a strong taste, which is not agreeable to many palates, it is not so much in use as it was formerly. The younger the plants are when used the less strong will be their taste, so they may supply the table in a scarcity, of other herbs."

Instead of allowing an admittedly valuable plant to go out of use, our French neighbours set to work to improve its qualities by intelligent cultivation, with the result that at least eight varieties, more or less distinct, have been developed with which the connoisseur may regale himself with very little trouble and at a trifling expense. The following are some of the best:—

- 1.—Broad-leaved, large-seeded; the most commonly grown variety, vigorous, rather pale in colour and lacking in substance, but gives a larger yield than the small seeded varieties.
- 2.—Cabbaging Dark Green, an excellent variety with short leaves, very agreeable to the taste, compact growing and very distinct.
- 3.—Louvier's Dark Green, a very quick growing, vigorous variety, forming a large rosette of spoon-shaped leaves, dark green, and of good substance, that travel well; it cannot be too highly recommended for crop, appearance and quality.
- 4.—Green Etampes, a compact plant, very hardy and travels well; the dark green leaves are curiously veined.
- 5.—Rouen Green, an earlier and brighter green-coloured form of the Etampes. *S. B. Dicks.*

CHICORY.

In gardens where a Mushroom house or similar structure is not available for the forcing of Chicory, the plants may be grown and blanched in pots. Receptacles nine inches in diameter are suitable and they may be filled with the old soil from seed boxes. When the crowns have been planted the soil should be soaked in tepid water, and the pot covered with an inverted pot of a corresponding size, taking care to close the drainage hole of the latter to exclude the light. The pots containing the plants may then be stood under the stage in a greenhouse, and in due time the crowns will send up crisp, tender leaves. *J. J.*

FRUIT REGISTER.

PLUM EARLY TRANSPARENT GAGE.

THE Transparent Gages, including Old Transparent, Early Transparent, Golden Transparent and Late Transparent, are amongst the most valuable of dessert Plums. The original Transparent Gage, which is usually known as Old Transparent Gage, is regarded by many as the best of all the Gages, and the others were raised from it by Messrs. T. Rivers and Son.

The value of these Plums is that they are available at different times, Early Transparent Gage being ripe at the beginning of August; the Old Transparent Gage is in season at the beginning of September, Late Transparent at the end of September, and Golden Transparent early in October. Early Transparent Gage was originally named by Messrs. Rivers, Early Apricot, and it is sometimes listed as Rivers' Early Apricot. The latter name, however, is not retained in Messrs. Rivers' catalogue, although we cannot trace any reason for the change of nomenclature.

Bunyard, in his *Handbook of Fruits*, describes Early Transparent as quite the best early Gage. The fruit is a pale apricot-yellow with a few crimson spots; the flesh is very rich and sweet and of a golden-yellow colour. The tree is a good cropper and of robust growth.

This excellent variety produces fruits of fine quality on trees trained against a sunny wall, but much the best specimens are obtained from orchard-house trees grown in pots. The fruits illustrated in Fig. 172 were exhibited by Mr. J. C. Allgrove in his Gold Medal exhibit of fruits at the Royal Horticultural Society's meeting on August 25.

GRAPE MILL HILL HAMBURGH.

THIS variety of Grape is one of the best of the black Sweetwater type, yet one seldom sees any reference to it to-day. It is a vigorous-growing vine carrying large, deeply-lobed leaves.

Under good cultural conditions, the bunches are well-formed with big, round berries, having a thin skin and tender flesh, which is very sweet and juicy. Its season is the same as that of Black Hamburgh; but its reliability for regular bearing is, perhaps, scarcely so good as that old favourite.

There are a couple of vines here of the Mill Hill variety which are said to be upwards of a century old.

GRAPE COOPER'S BLACK.

LOOKING round a neighbouring garden a short time since, I was shown some excellent bunches of a Grape my guide called Cooper's Black. The large, deep black berries hung in shapely bunches of good size, and the rods being well-fruited, presented a handsome appearance.

There were several vines under the above name in evidence, one being on its own roots while the others were worked on Trentham Black and Lady Downes.

Concerning the own-root vine, it was pointed out to me that its berries were not so large as those from the rods worked on the varieties named. There is one serious defect, however, in this esteemable Grape, for its flavour cannot be accounted more than of second-rate quality. The growth of the laterals was strong, and the general management of the vine easy.

As I could not recall having had any experience with this Grape in my probationary days or since, I looked up, after my visit, what the authorities had to say about it. Of three consulted, one only makes any reference to this variety, and that one gives Cooper's Black as synonymous with Gros Maroc. This latter Grape I know, and am bound to admit there was a striking resemblance between what I was shown as Cooper's Black and Gros Maroc in most details except flavour, in which it seemed inferior to Gros Maroc. Perhaps some expert Grape grower will state whether these two sorts are accepted as one and the same, or whether they are distinct. C. Turner, *Amphill Park Gardens*.

HOME CORRESPONDENCE.

Buddleias and Butterflies.—The correspondence on the absence of butterflies in gardens this summer has made interesting reading. In 1921 the visits to my Buddleias of the varied coloured types of butterflies as mentioned by Mr. Dicks and others, were in such numbers day after day, that to give any estimate of such would have been an impossible task. Since then these coloured insects have been very rare visitors, but during the past flowering season, the visits of the two white species have been so immense in number that very often the immediate surroundings of one huge *Buddleia variabilis* could only be likened to a miniature storm of large snow-flakes. The sight was so unusual that I asked friends to come and see the butterflies. A similar phenomena occurred in 1911 in a field of Beans. As one who has studied entomology I cannot give a reason for such

and also to dress the affected ground at the same time, as the latter would contain numerous spores of the fungus causing the mildew. F. W. Chilvers, *Sherrington Manor Gardens*.

Do Plants Reason?—During the past year, I have kept observation on a most interesting matter. The subject is a Black Hamburgh vine. The vinery is a large lean-to, and the border an ample one. The back wall is fifteen feet high, and probably continues three feet below the ground level. The edge of the path grating rests on a brick wall, and the space of fifteen inches between this and the back wall is occupied by a four-inch flow and return water-pipe. Beyond the back wall, about forty years ago, was a farmyard with its attendant piggeries, manure heaps, etc. When the farmyard was demolished Morello Cherries were planted against the high wall, a border being formed. Without a doubt, there was, and still is, great manurial richness in the soil there. When the Cherry border was dug over some time ago healthy vine roots

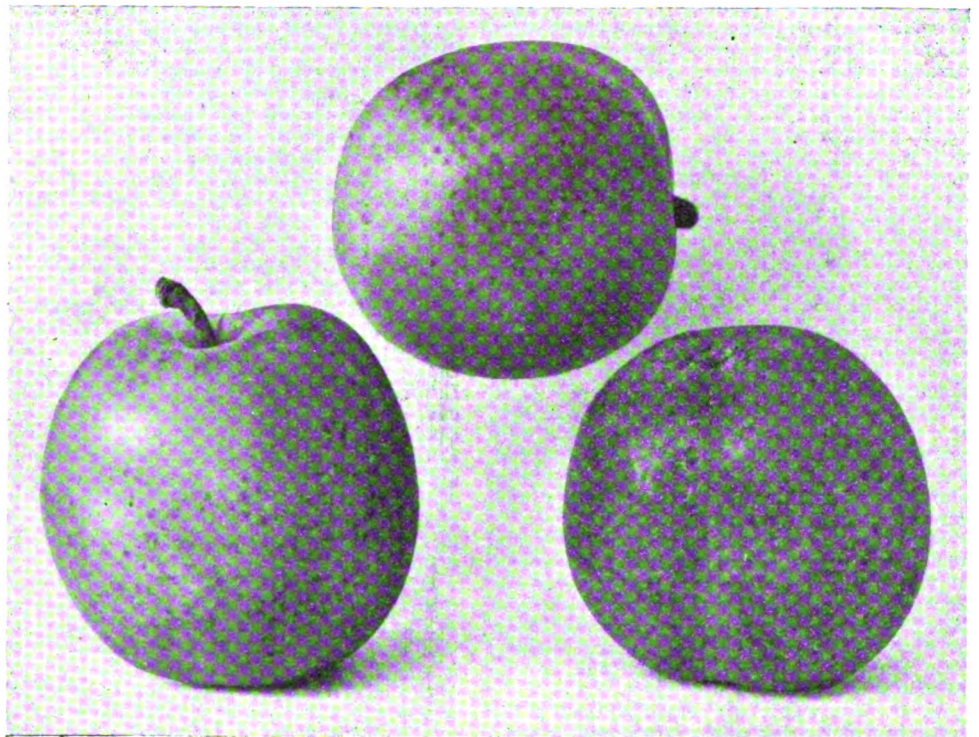


FIG. 172.—PLUM EARLY TRANSPARENT GAGE.

rare occurrence. My earliest observations this season of any coloured butterflies was on Easter Monday, since when I have not counted a dozen. Victor H. Lucas, *Hurworth-on-Tees, Darlington*.

Onion Mildew.—Referring to your correspondent's enquiry on page 375, on Onion mildew, the following may be useful to him and also to others. For several seasons, and in 1924 in particular, Onion mildew has caused serious injury to my Onion beds. I was talking this over with my old friend Mr. W. Goaring, and he advised me to try sulphate of iron, at the rate of one pound per rod, at the time of sowing, and to be worked in when preparing the ground. I carried out his instructions and in addition to this, when the time came for the pest to appear, I dusted the bed on two occasions early in the morning, when the dew was on the foliage, with equal quantities of sulphur and fresh lime, and the result was a very fine crop and no signs of mildew whatever. Messrs. Goaring and Heaton paid me a visit as mentioned on p. 233, remarking on the healthy appearance of the crop. I advise Mr. West to change his plot for Onions as far away as possible from the ground recently cropped with them giving it a dressing as mentioned

were turned up, and a search within the vinery discovered a strong root from the Black Hamburgh vine near the surface beneath the grating. This root had reached the low wall, crept alongside it, and finally, turning back, found a crevice and disappeared through it. The fact that quantities of vine roots are beyond the vinery wall proves that the root penetrated beneath the hot-water pipes and under the big main wall. Increased vigour and fine fruit are the result of a new source of food supply. The fascinating problem is: How did the vine know there was rich soil beyond the wall, and why should it endeavour—and successfully—to surmount all difficulties to reach a desired object? George. W. Stacey, *Chorleywood Cedars*.

Choice varieties of Border Irises.—In reading the list of Irises given by Mr. Logan on p. 346, I was impressed by the omission of the very best ones, for example, Aphrodite raised by Mr. W. R. Dykes; Lent A. Williamson, an American raised variety; Shekinah and Dream both raised by Miss Sturtevant; Mr. G. Yeld's Asia and Prospero; Ambassadeur, sent out by Messrs. Vilmorin-Andrieux et Cie, Paris; and Mr. Bliss's Dominion. Bruno, Cardinal, Moa and Evadne. W. J. M.

SOCIETIES.

SOCIÉTÉ NATIONALE D'HORTICULTURE DE FRANCE.

THE final display organised by the French National Horticultural Society in connection with the Decorative Arts Exhibition in Paris took the place of the usual autumn show. As is usual at this time of year, Chrysanthemums took pride of place, and fruits also made an imposing display. The Dahlia, having suffered by the recent frosts, had to give way before the queen of autumn flowers, and to the great regret of those who make Dahlias their speciality.

The firm of VILMORIN-ANDRIEU ET CIE, of Paris, had at the entrance to the pavilion a large group entirely composed of Chrysanthemums, of which the main feature was an immense portico in old rose and grey, abundantly decorated with flowers; in the foreground, a stairway of pink Chrysanthemums led to a round hollow furnished with plants of cream, pink, white, and tawny shades. There was also a considerable number of plants for various purposes—market plants, specimens, one-flowered plants, and some of ordinary cultivation. Among others noted were fine specimens of *Blanche Poitevine*, white; *La Crau*, pinkish-white (trained in octagonal form); *Edith Cavell*, brownish-yellow; *L. C. Thorne*, pinkish-white; *La Puisaye*, brownish-red; *Silver King*, pink, with silvered reverse; *Norman Chittenden*, pure white; and *Cavatine*, brownish-yellow. As regards seedlings, the following received Certificates of Merit:—*Bourguignon*, Japanese, blood-red with yellow reverse; *Vendéen*, incurved Japanese, honey yellow; *Le Valentin*, orange red with yellow reverse; *Savoyard*, spirally incurved, milk-white with cream reflexes; *Beauceron*, citron yellow; and *Béarnais*, amaranth, with violet reverse.

MME. VVE. MARTIN ET FILS, the big Chrysanthemum raisers of Champigny, also showed a number of seedlings not yet in commerce, of which the following, among others, were certificated:—*Souvenir de René Alavoine*, red, lined with gold; *Val Joli*, old rose; *Violetera*, plum-violet with mauvish-white reverse; and *Ami Bezy*, sulphur yellow.

M. FERON, of Garches, had a circular group comprising very fine, large flowers, in the centre of the pavilion, which included *Thomas W. Pockett*, a large pink flower with silvered reverse; *Mme. Jane Maurel*, pure white; *Ernest Vidé*, a very beautiful incurved, bronzy yellow; *Fred Huggett*, white centre and pink crown; *Armistice*; and *Ami Paul Labbé*.

M. G. TRUFFAUT, of Versailles, had a big group in which a fine colour effect was obtained by massing the various shades; the chief varieties used were *Undaunted*, pink; *Salonica*, brownish red; *R. C. Pulling*, yellow; and *Jeanne d'Arc*, white.

The firm of FÉRAUD, of Paris, had a little group of single varieties including *Serin*, yellow; and *Mouette*, white; MM. LOCHOT ET FOURDIGNIER, of Pierrefitte, showed *Mme. Romet*, a white sport from *Président Poincaré*; *Deuil de Paul Labbé*, purple garnet colour; *Enchantress*, deep pink; and *D. B. Crane*, bright pink.

Fruits were represented by a number of excellent groups, but one which must be mentioned as being altogether unequalled was the wonderful display of Grapes made by M. SALOMON, of Thomery, which included *Gradiska*, white; *Black Alicante*; *Alphonse Lavallée*, black; *Angelino*, pink; *Chauoia* and *Cornichon*, white, elongated berries; and *Muscat Cannon* Hall, with enormous round white fruits. The display was set off by garlands of an ornamental vine, bearing pretty little turquoise blue berries—*Vitis brevipedunculata*. The VINEGROWERS SYNDICATE of Thomery also had a nice display of Grapes, furnished with faultless examples of *Chasselas de Fontainebleau*.

Among other exhibits of fruits must be mentioned the fine collections of Apples and Pears of Messrs. NOMBLOT, of Bourg la Reine, and MOSER, of Versailles. Among the fruits of the first-named firm, which were prettily decorated with the berries and ornamental

foliage of *Berberis*, *Cotoneaster*, *Symphoricarpos* and *Ruscus*, were lovely specimens of Apples *Calville St. Sauveur*, *Belle Dubois*, and *Maiden's Blush*, and of Pears *Beurré Superfin*, *Charles Ernest*, *Beurré Bachelier*, and *Beurré d'Appremont*, the latter a long-shaped fruit, with greyish colouring. M. MOSER had Apples *Peasgood's Nonesuch*, and Pears *Doyenné du Comice*, *Beurré de Naghin*, *Duchesse Bererd*, and Dr. Pigeaux among his collection.

The other exhibitors showed mainly commercial varieties of current interest; M. CHAUFFOUR, of Versailles, had some marvellous *Doyenné du Comice* Pears, and also a large, curiously curved *Calabash Pear*, Mme. Furst. The students of the arboricultural course at the Luxembourg Gardens (PROF. CUNY), brought a very fine exhibit of current varieties, and M. PESTEL, of Marques, Normandy, showed an interesting series of Cider Apples.

M. CHARLOT, of Paris, worthily represented Parisian floral art with very pretty vases of Roses, Carnations, *Lilium speciosum*, and *Cattleyas*, and an elegant basket of *Cyclamens*.

A group of enormous and well-varied vegetables, from the IGNY HORTICULTURAL COLLEGE, replaced, at the last moment, an exhibit of Dahlias which had failed to remain in condition.

The little Orchid house was abundantly furnished, chiefly with *Cattleyas*. M. MARCOZ, of Brunoy, showed fine specimens of *Cattleya amabilis alba*, with pure white petals and lilac labellum; *Brasso-Cattleya Leemann*, the delicate fimbriated labellum greenish with pink edges; *Cattleya tenebrosa gigas*, lilac with spotted labellum; *Cattleya Aviateur Pégoud*, chamois, with purple labellum; and *Oncidium Rogersii*, yellow. MM. VACHEROT ET LECOULE sent from their establishment at Boissy St.-Leger, *Laelio-Cattleya Barrés*, chamois petals and magenta labellum; *Oncidium Boissayense*, yellow; *Odontoglossum amabile*; and *Laelio-Cattleya elegans Turneri* × *Brasso-Cattleya Leemann*, a large, dark red flower, with an enormous fimbriated labellum. M. PERRIN, of Clamart, had among other good things *Cattleya Luminosa*, yellow petals and magenta labellum; and *Cattleya Alcimeda alba*. (*C. labiata alba* × *C. Gaskelliana alba*), the large flower pure white, except for the brownish-yellow colour at the centre of the labellum. For this latter, a Certificate of Merit was awarded.

Codiaeums and warm house foliage plants were shown by M. CHANTRIER, of Mortefontaine, M. BILLIARD, of Vésinet; and M. VALLERAND, of Taverny, sent tuberous *Begonias*; *Roses* in pots were presented by M. LEVEQUE, of Ivry; a very pretty collection of small *Cacti* in pots was exhibited by M. THIEBAUT, of Paris; and M. KEMPNIK, of Voippy (Alsace), showed enormous pots of *Cyclamens*, well-flowered and of various colours. Then there was the little salon of flower paintings, usually a feature of the autumn show, in which were also exhibited plans and designs of garden architects, and the artistic moulded artificial fruits made by M. THEVENY, of Paris.

With this final exhibition the participation of the Society in the Exhibition of Decorative Arts terminates, a participation which has necessitated a very great and sustained effort on the part of the exhibitors. In spite of the fact that the position reserved for the horticultural pavilion was very badly chosen, and the almost total lack of advertisement, the efforts of the horticultural exhibitors have none the less been fully appreciated by the public, and at every successive exhibition a numerous and interested throng has never ceased to press into the pavilion to admire the beautiful things presented there. A.M.

GUILDFORD AND DISTRICT CHRYSANTHEMUM.

OPENED by the President, F. F. Smallpiece, Esq., J.P., the thirty-third annual show of the above Society, held at Guildford on the 4th and 5th November, was a marked success. The exhibits, which taxed the capacity of the large Borough Hall with its anterooms and some of the corridors, were all of a high standard

in merit, and drew well-deserved compliments from the judges. The professional growers and amateurs alike staged splendid exhibits in all classes of flowers, fruit and vegetables. Grapes were particularly fine, and the same might be written of the Apples, which were temptingly displayed in great variety in first-class condition. Table decorations were exquisite both in Roses and Chrysanthemums, and trade exhibits by various local firms were in keeping with the general excellence of other exhibitors.

The premier bloom of the show was grown by Mrs. PAYNTER, of Stoke Hill (gr. Mr. Cook)—Mrs. Algernon Davis—and a group in which it appeared won the first prize for the best collection.

Another striking exhibit, artistically displayed was a group of singles, naturally grown without disbudding, by the President of the Society (gr. Mr. W. F. Binfield). This had no competitor, but was worthy the first prize it obtained.

Quite a number of the exhibits realised good prices at a Dutch auction conducted by Mr. Joy, of Snowdenham Hall, at the close of the show, the proceeds going to augment the funds of the Society—the balance sheet shows a sum in hand of £66 brought forward, and judging by the attendance on both days, this year's show should be self-supporting.

READING AND DISTRICT GARDENERS.

THE usual fortnightly meeting was held in the Abbey Hall, on the 9th inst., when the President (Mr. Frank E. Moring, F.R.H.S.), presided, the attendance of members numbering 126.

The subject for discussion was "Chrysanthemums," and this was introduced in a well-written and exceedingly practical paper by Mr. H. H. Lucking, The Grotto Gardens, Streteley, a member of the Pangbourne Gardeners' Mutual Improvement Association. He dealt exclusively with the large bloom section.

In the competition for six large blooms of Chrysanthemums there were six entries, and many fine blooms were staged. The first prize was awarded to Mr. A. H. Dow, Calcot Park Gardens; the second to Mr. F. J. GREEN, Aldermaston Court Gardens, and the third to Mr. C. S. CLACY, Sidmouth Grange Gardens, Reading. In the non-competitive section a First-Class Certificate was awarded to Mr. A. W. GOWER, Calcot Grange Gardens, for a magnificent group of Chrysanthemums, whilst Awards of Merit were granted to Mr. G. CLARK, Dyson's Wood Gardens, for Tomatos; to Mr. W. SAUNDERS, St Catherine's, Bear Wood, for Sea Kale Beet; to Mr. F. TURNER, Southview, Calcot, for three vases of Chrysanthemums. Seven new members were elected.

KINGSTON AND SURBITON CHRYSANTHEMUM.

THE eighteenth annual exhibition was held at Surbiton Assembly Rooms, on Wednesday, November 7, and was most successful in every way. The Challenge Cup, given by the Tradesmen of Kingston and Surbiton, was won by Mr. E. H. PEARCE, gardener at the Lord Wandsworth Agricultural College, near Basingstoke, with a magnificent lot of blooms in six vases; the varieties were Mrs. B. Carpenter, Frances Jolliffe, F. J. Fleming, R. C. Pulling, Mrs. A. Davis and Majestic. The N.C.S. Gold Medal and a Certificate also went to this exhibit. For a group of Japanese Chrysanthemums in pots, A. G. E. HOWESON, Esq. (gr. Mr. Cannon) won first prize, and his group contained some very fine blooms in good condition. For a group of single varieties in pots, G. C. HODGSON, Esq. (gr. Mr. Belfield), won the first prize, including the Bond Challenge Cup and the N.C.S. Silver-Gilt Medal. The class for a group of singles, in vases, brought no entries for the fine Silver Cup offered by the President. Amateur growers staged some very fine flowers, especially Mr. SURRY, Mr. O. HAWKINS and Mr. BONE.

A Special Prize, given by P. Chapman, Esq., for the best bloom grown in the Society's district, was won by Mr. M. C. CANNON, the variety being Mrs. B. Carpenter; a similar prize for the amateurs went to Mr. SURRY, for a very fine bloom of Masterpiece.

Messrs. ALLWOOD BROS., Hayward's Heath, staged a large display of perpetual Carnations. Mr. L. R. RUSSELL, Richmond, exhibited a large group of stove and greenhouse plants which proved very interesting, and a group put up by Sir W. CORRY, Bart., Claremont, Esher (gr. Mr. W. Payne), contained some fine specimens of Dracaenas and Codiaeums with other exotic plants. Some miniature Japanese gardens from Mr. J. H. PAGE were good specimens of this style of gardening. A large collection of very fine Apples was put up by Mr. GARDNER, Ruxley Lodge, Claygate. The attendance was very good and the notable increase in exhibits proves that Chrysanthemum culture is recovering from the late depression.

ROYAL HORTICULTURAL.

NOVEMBER 17.—Following closely upon the annual show of the National Chrysanthemum Society, when the hall was filled with magnificent flowers and a crowded attendance, the R.H.S. Hall, Westminster, was strangely quiet on the above date, when there was the smallest November show for a very long time. Chrysanthemums, a splendid exhibit of winter-flowering Begonias, and Carnations, were the chief floral features, and there were two good exhibits of fruit. The main portion of the centre of the hall was occupied with exhibits of garden plans and paintings of more or less interest and merit.

Orchid Committee.

Present:—Sir Jeremiah Colman (in the Chair), Mr. Gurney Wilson (Hon. Sec.), Mr. R. Brooman White, Mr. Frederick J. Hanbury, Mr. H. S. Pitt, Mr. S. W. Flory, Mr. Arthur Dye, Mr. H. G. Alexander, Mr. Fred K. Sander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. H. H. Smith, Mr. E. R. Ashton, Mr. T. Armstrong, Mr. R. Thwaites, Mr. J. Wilson Potter and Mr. Stuart Low.

AWARDS OF MERIT.

Brasso-Cattleya Rosita (*Cattleya aurea* × *B. C. Ilene*).—The lip of this hybrid is very large, finely fringed and showy, the central golden area being marked with rosy-orange and surrounded by purplish-rose. The sepals have a pale yellow ground, mottled with rose, and the petals are light purplish rose with faint mottlings of pale yellow. Shown by Messrs. STUART LOW AND CO.

Cypripedium Baldur var. *magnificum* (*G. F. Moore* × *Niobe*).—An upstanding flower showing traces of *C. Fairrieanum* parentage. The broad dorsal sepal is pale rose with heavier markings and lines of deeper shade and a brownish-green base. The petals and lip are rich, burnished brown with dark lines on the former. Shown by Sir GEORGE HOLFOFF (gr. Mr. H. Alexander), Westonbirt, Tetbury.

Cypripedium Roslyn (*Niobe* × *Reginald Young*).—In this also the evidence of *C. Fairrieanum* parentage was obvious. The dorsal sepal has a white ground with dark, blackish-purple lines and chequering and a green base. The petals are green, marked with brown, and the neat lip is brown. Shown by Messrs. SANDERS.

OTHER EXHIBITS.

Sir JEREMIAH COLMAN (gr. Mr. J. Collier), Gatton Park, Reigate, showed a fine specimen of the "blue" *Cattleya Ariel* var. *Gatton Blue*, carrying fifteen flowers; a specimen of *Brasso-Laelio-Cattleya Antoinette*, with eight handsome flowers; examples of *Coelogyne barbata*, *Cirrhopetalum Medusae*, *Masdevallia pachyantha* and cut flowers of several varieties of *Laelia pumila* and *L. praestans*.

Several growers sent a few plants, and among these the specimen of *Vuystekeara Rutherford Sylvia* was charming as shown by Messrs. CHARLESWORTH AND CO. *Cattleya Roderick* and the hold *Brasso-Cattleya Alderman* were

conspicuous among Messrs. BLACK AND FLORY'S plants.

Messrs. COWAN AND CO. were the only exhibitors of a group of Orchids on this occasion, and they set up about three dozen plants, each raised on a low stand, without any accompaniment other than green moss over the pots. A handsome flower of *Cattleya Aeneas*, gold and ruby, occupied the central position, while *Brasso-Cattleya British Queen* represented by three plants each carrying a pair of blooms, was conspicuous among *Cypripediums* and a few *Odontoglossums*. The best of the *Cypripediums* were *C. Reginald Young*, *C. Ellis Needham*, *C. Cyclops*, *C. Elatior*, *C. Leeannum* var. *J. Gurney Fowler*, *C. Maudiae magnificum* and *C. Actaeus*.

Floral Committee.

Section A.—Present: Mr. Henry B. May (in the Chair), Mr. J. F. McLeod, Mr. H. J. Jones, Mr. W. Howe, Mr. J. M. Bridgeford, Mr. Hugh Dickson, Mr. D. Ingamells, Mr. W. A. Binley, Mr. M. C. Allwood, Mr. A. G. Cousins, Mr. F. Streeter, Mr. J. B. Riding, Mr. W. B. Gingell, Mr. D. B. Crane, Mr. Charles E. Pearson, and Mr. H. R. Darlington.

Section B.—Present: Mr. Chas. T. Musgrave (in the Chair), Sir William Lawrence, Mr. Gerald Loder, Mr. G. Reuthe, Mr. E. H. Wilding, Mr. C. Williams, Mr. A. Bedford, Mr. F. G. Preston, Mr. Reginald Cory, Mr. R. C. Notcutt, Mr. R. D. Trotter, and Mr. James Hudson.

AWARDS OF MERIT.

Leonotis Leonurus, *The Warren* var.—An old garden plant, figured in the *Botanical Magazine*, t. 478, 125 years ago, *Leonotis Leonurus* is a greenhouse exotic which has had several names, notably *Phlomis Leonurus*—the name given in connection with the *Bot. Mag.* figure—*Stachys africana*, *Leonurus Capitis bonae*, and *L. africana*, the latter occurring in *Miller's Dictionary*. The plant is a shrubby Labiate introduced from South Africa in 1712. It may grow so tall as seven feet or eight feet, but clever cultivators produce good plants about three feet high. As a late autumn- and winter-flowering plant it is worthy of consideration as its whorls of scarlet flowers produce a very bright effect. On a stout flowering stem there may be so many as four or five whorls or tiers of flowers. The latter resemble those of the Dead Nettle in shape, but are rather longer and not so tightly packed in the whorls. In *The Warren* variety the flowers are of a light orange shade. Shown by Mr. C. M. PRESTON, The Warren, Hayes.

Galanthus byzantinus var. *November*.—A sturdy autumn-flowering variety, with large, white flowers that have a green, white-edged centre. The leaves are half-an-inch broad and the flower stems about six inches high. How far this differs from a good form of *G. byzantinus* we cannot state, but it is a delightful hardy plant. *G. byzantinus* is considered to be a natural hybrid between *G. plicatus* and *G. Elwesii*. Shown by C. T. MUSGRAVE, Esq., Hascombe Place, Godalming.

Chrysanthemum Crimson Dawn.—A grand single variety of vivid blood-crimson colour. The florets are broad and there is a very narrow yellow zone around the eye. Shown by Mr. H. SHOESMITH, JUNR., Woking.

Chrysanthemum Eton Beauty.—A decorative variety of rich, velvety crimson colour. Shown by Mr. W. HALL, Eton Hall Gardens, Witley.

Chrysanthemum Clio.—A rosy terra-cotta decorative variety. Shown by Mr. H. SHOESMITH, JUNR.

GROUPS.

The most extensive floral displays were made by Chrysanthemums which were shown in great excellence by Mr. H. J. JONES who filled a large space. His exhibition Japanese blooms were especially magnificent, and included *Queen Mary* and *Victory*, white; *Princess Mary* and *Mrs. R. C. Pulling*, yellow; and the mauve *Mrs. Algernon Davis*. In the centre of this very fine collection there was a fascinating vase of the decorative variety *Rayonnante* together with good white and buff coloured sports; the association of pink, buff and white

was particularly successful. One of the best singles in the group was the new *Crimson Dawn*, a very shapely flower of rather more than average size, and rich, velvety crimson colouring. The Hon. Edith Smith, a single, of similar size but with broader florets, is also very decorative. Its mauve shade of colour is reminiscent of *Vivian Morel*, a variety which, a couple of decades and more ago, was an indispensable exhibition variety. Although not now exhibited it is extensively grown for the market.

In a rather smaller but very meritorious group of Chrysanthemums, Messrs. KEITH LUXFORD AND CO., included splendid blooms of *Julia*, a rosy sport from Mrs. B. Carpenter; *Major Wheatley*, yellow base colour, lightly overlaid with rosy pink; and the yellow *Mrs. R. C. Pulling*. Singles were also well represented by *Catriona*, old rose with small white zone; *Everbright*, rich apricot; *Mary Newton*, rosy terra-cotta, with a golden disc; and the pure white *Nona*.

Decorative varieties and single Chrysanthemums were gracefully displayed by Mr. A. G. VINTEN. Chief amongst the former were *Golden Marvel*, *Golden Wonder* and the brilliant *Shirley Scarlet*. The singles included *Nona*, *Robert Collins*, rich amber; *Bridgwater Absolute* very bright crimson; and *Floria*, a medium-sized bright pink, with a narrow white zone.

Messrs. JOHN PEED AND SON set up the finest collection of winter-flowering Begonias that has been exhibited for a considerable time. Each of the many plants, which filled a whole length of double tabling, was a perfect specimen of useful size and the use of *Kentias* along the centre, with *Codiaeums* (*Crotons*) and *Dracaenas* at judicious intervals added to their decorative value. The principal varieties of *Begonia* were *Exquisite*, lovely blush pink, becoming deeper in colour at the margins of the petals; *Optima*, rich deep salmon; and *Eclipse*, semi-double flower of reddish-salmon. The principal *Codiaeums* were very elegant specimens of *Palais de Glace*, *Inimitable*, *Areitimensis*, and *Lady Zetland*.

Carnations were shown in considerable quantity by Messrs. STUART, LOW AND CO., Messrs. ALLWOOD BROS., and Mr. C. ENGELMANN. The principal varieties staged by Messrs. STUART LOW AND CO. were Sir Philip Sassoon, *Eileen Low*, *Topsy* and *White Queen*. They also showed good plants of *Acacia platyptera*, *A. Baileyana* and *Erica melanthera*. The Carnations of Messrs. ALLWOOD BROS. included *Topsy*, *Triumph*, *Shot Silk* and *Mikado*, while Mr. C. ENGELMANN set up bright vases of *Laddie*, *Red Laddie*, *Orange Sunstar*, *Maine Sunshine*, *Betty Low* and *Cupid*.

In a floor group Messrs. L. R. RUSSELL LTD., arranged various hardy shrubs such as *Golden Ivies*, *Pittosporum Silver Queen* and *Pyracantha Lelandii*. Mr. SCRASE-DICKENS, Horsham, exhibited an attractive group of white Christmas Roses with autumn-tinted leaves of *Berberis aquifolium*. The Misses HOPKINS showed pans of Primroses, and Mr. J. KLINKERT had a collection of shapely topiary specimens, chiefly in Box. Messrs. REAMS-BOTTOM AND CO. showed *St. Brigid Anemones*.

Many exhibits of paintings of garden scenes and floral studies materially assisted to fill the hall. The principal exhibitors were Miss JULIET WILLIAMS, who displayed very good studies of *Anemones*, *Marigolds*, spring-flowering shrubs and *Rambler Roses*; Miss EDITH FISHER, Miss E. M. KILPATRICK, Mrs. M. TOWNSEND, Mrs. EDITH ANDREWS, Mrs. HENRY SPENCER, Mrs. ALFRED WOOD, and Mr. H. P. OKEDEN. Dr. GEORGE H. RODMAN had photomicrographs of the petiole of *Limnanthemum peltatum*, showing the idioblasts and their relation to the air spaces. An unnamed exhibitor set up interesting paintings of Irises from the Caucasus.

Fruit and Vegetable Committee.

Present: Mr. J. Cheal (in the Chair), Mr. P. D. T. Tuckett, Mr. G. F. Tinley, Mr. S. B. Dicks, Mr. W. Giles, Mr. T. Pateman, Mr. H. Prince, Mr. E. H. Neal, Mr. E. Beckett, Mr. W. H. Divers, Mr. E. A. Bunyard, and Mr. A. N. Rawes.

GROUPS.

The Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree, showed a collection of fruits comprising eighty varieties of Apples, two of Pears, eight of Grapes and two of Medlars. This very excellent exhibit was staged in a most attractive manner, quite different from that usually adopted by exhibitors. Mr. Beckett utilised a lattice-work background, and on this were arranged brackets which served to hold ornamental baskets of Apples. Overhanging the stand were fine Palms, and many pretty berried and foliage plants were used as decoration, including *Berberis*, *Selaginellas* and fine *Draecenas* and *Codiaeums*. Most of the Apples were arranged on stands of varying heights, while the Grapes were displayed on the usual Grape stands. Amongst the more notable varieties of Apples were Hoary Morning, Cox's Orange Pippin, May Queen, Queen Mary, Blenheim Pippin, James Grieve, Madresfield Court, Washington, Striped Beefing, and King of the Pippins; while the Pears included Catillac and Uvedale St. Germain. Excellent bunches of the following Grapes were exhibited: Lady Downe's Seedling, Alnwick Seedling, Cooper's Black, Appley Towers, Gros Maroc, Alicante and Muscat of Alexandria.

Messrs. GEO. BUNYARD AND CO., LTD., Maidstone, exhibited varieties of Apples representing some of the best in season. The sorts shown were: Rival, Norfolk Beauty, Peasgood's Nonesuch, Ellison's Orange, Wealthy, King of the Pippins, Coronation, Lane's Prince Albert, Charles Ross, Lord Derby, Blenheim Pippin and Golden Noble.

Messrs. BRINKMAN BROS., Chertsey, showed fruits of their new Apples George Carpenter and Victory. George Carpenter is a cross between Blenheim Orange and King of the Pippins, and has a true Blenheim flavour: Victory is the result of crossing Peasgood's Nonesuch and Bismarck, and is similar in size to that of the former variety.

Mr. W. H. DIVERS brought three Apples, one each of Tun, an old Essex variety, Adams's Pearmain and Madresfield Court, to show how very alike, both in shape and colour, these three varieties are. They are, however, quite distinct, and of the three, Madresfield Court is much the best in quality. Tun is an old Apple grown extensively in Essex, but found in very few catalogues of Apples. It was included in the Royal Horticultural Society's Apple Conference in 1883, and is described in *British Apples* as a large, oblong, reddish-russet Apple of first quality.

Trial of Second Early Potatos.

The following Awards have been made to Second Early Potatos by the Council of the Royal Horticultural Society after trial at Wisley.

AWARD OF MERIT.

Great Scot, sent by Messrs. W. H. SIMPSON, Birmingham; Messrs. BARR AND SONS, London; Messrs. GARDEN SUPPLIES, Liverpool; Messrs. DOBBIE AND CO., Edinburgh; and Messrs. DICKSON AND ROBINSON, Manchester.

HIGHLY COMMENDED.

King Edward VII, sent by Messrs. W. H. SIMPSON; Messrs. GARDEN SUPPLIES; and Messrs. DOBBIE AND CO. Ardnell Rose, sent by Messrs. J. CARTER AND CO., Raynes Park.

COMMENDED.

King George V,* sent by Messrs. W. H. SIMPSON; Messrs. BARR AND SONS; Messrs. J. CARTER AND CO.; Messrs. GARDEN SUPPLIES; and Messrs. DICKSON AND ROBINSON.

Ally, sent by Messrs. GARDEN SUPPLIES; and Messrs. W. H. SIMPSON.

K. of K., sent by Messrs. DICKSON AND ROBINSON and Messrs. W. H. SIMPSON.

Edzell Blue*, sent by Messrs. J. CARTER AND CO. and Messrs. DICKSON AND ROBINSON.

*Award recommended for crop.

NATIONAL CHRYSANTHEMUM.

At the meeting of this Society's Floral Committee held at the Royal Horticultural Society's Hall on November 16, twenty-four novelties were submitted, and the following awards were made:—

FIRST-CLASS CERTIFICATES.

Jessie McNab.—V.2.a. A large, single variety of elegant form, the several rows of florets drooping gracefully. Colour clear yellow. Shown by Messrs. KEITH LUXFORD AND CO.

Ajax.—A large, loosely-incurving Japanese variety of fine exhibition form. The colour is yellow, shading to deep amber.

Glio.—II.b. A reflexing Japanese variety of fine market and decorative type. The flowers are of good form and substance and borne on good stems. The colour is rosy terra-cotta. This and the foregoing variety were shown by Mr. H. SHOESMITH, junr., Mayford, Woking.

Ra.—II.2.b. This is a capital market variety of closely-incurving Japanese form and rich orange-yellow colour. The flowers are of good substance and promise to travel well. Shown by Messrs. CRAIG, HARRISON AND CRAIG.

Enton Beauty.—II.1.b. Although only of medium size, the blooms of this variety are attractive by reason of their graceful, reflexing Japanese form and rich, velvety crimson colour. Shown by Mr. W. HALL, Enton Hall Gardens, Witley.

Mrs. F. Brill.—V.2.a. A distinct, large, single variety with bronze florets. Should prove useful for exhibition purposes. The colour is deep rose with a narrow white zone around the eye. Shown by Mr. G. CARPENTER, West Hall Gardens, Byfleet.

BRIGHTON AND HOVE HORTICULTURAL.

NOVEMBER 10, 11 AND 12.—After the bitterly cold weather endured in London, it was a pleasure to find Brighton bathed in warm sunshine on the opening day of the Brighton Society's autumn exhibition, which was held as usual, in the Dome and Corn Exchange.

A splendid exhibition was provided and competition was keen throughout the various classes while non-competitive displays were unusually good. The latter included a very fine exhibit made by the Brighton Corporation, consisting of Chrysanthemums and foliage plants arranged on the stage and orchestra of the Dome, by Mr. B. H. MACLAREN, Superintendent of the Brighton Parks. This exhibit was the most imposing one in the show, and its arrangement merited the high praise bestowed upon it. The exhibition was opened by Lord Lambourne, V.M.H., the veteran President of the Royal Horticultural Society, who was amazed and gratified by the display he had especially journeyed down to see.

The Brighton Society offers several special awards, and the chief of these, the Brighton Challenge Bowl, offered for the best exhibit in the show, was awarded to Messrs. KEITH LUXFORD AND CO., for a very fine exhibit of Chrysanthemums. The Balchin Cup, for the best oval group of Chrysanthemums in pots, was awarded to S. EXELEY, Esq. (gr. Mr. O. A. Cosham), Grand Hotel, Eastbourne. The Colman Bowl, presented by Alderman J. Colman for the best exhibit of twenty-four Japanese blooms, was won by F. E. RICHARDS, Esq. (gr. Mr. G. Tyler), East Grinstead, who has now won the trophy three years in succession. The Callaghan Silver Cup, offered for the best exhibit of black Grapes, was awarded to Mr. Hogg, of Worthing, while a barometer offered as special prize by Mr. T. Webber Gerrard, Withdean, was won by Mr. R. WHEARE, with the best collection in the vegetable classes.

As already stated, S. EXELEY, Esq., was the most successful exhibitor of Chrysanthemums in pots, but he won this notable award in keen competition, where W. H. VOKINS, Esq. (gr. Mr. W. J. H. Scott), Beechwood, Withdean, won second prize, and Mr. N. D. BROOKS, Blatchington Road, Hove, the third. Mr. HAROLD JACKSON, Sillwood Road, Brighton, won first prize for six table plants, while for six Begonias of the Gloire de Lorraine type,

Mr. A. MASON, Stanmer Park Gardens, was the most successful exhibitor.

The best twenty-four Japanese blooms in not fewer than eighteen varieties, arranged in vases, were exhibited by F. E. RICHARDS, Esq., who was followed in the order mentioned by Mr. W. H. APTED, Broadwater, Worthing, and Captain R. ALMACK (gr. Mr. R. Wheare), Danny Park, Hurst. F. E. RICHARDS, Esq., and Mr. W. H. APTED were first and second respectively for twelve distinct Japanese Chrysanthemums exhibited in vases, and both had commendable exhibits. For six blooms of one variety in a vase, shown with their own foliage, Mr. APTED secured the chief award, with F. E. RICHARDS, Esq., second, and VISCOUNT COWDRAY (gr. Mr. R. Middleton), Paddockhurst, third. VISCOUNT COWDRAY was the most successful exhibitor of six vases of single Chrysanthemums, and Mr. W. H. APTED occupied the second position. For three vases of single Chrysanthemums, W. S. POOLE, Esq. (gr. Mr. J. G. Caswell), Oakwood, Haywards Heath, won the premier award, and was equally successful in the class for twelve disbudded blooms of single Chrysanthemums, while VISCOUNT COWDRAY had to be content with the second position. Mr. W. H. APTED led for four vases of decorative Chrysanthemums, followed by Messrs. G. EASTWOOD AND SONS, Hassocks, and C. T. CHANDLESS, Esq. (gr. Mr. F. W. Chilver), Sherrington Manor, Selmeiston.

C. T. CHANDLESS, Esq., contributed the best table of cut Carnations arranged for effect, and Messrs. G. EASTWOOD AND SONS were winners of the second prize. Mr. A. COOPER, Broadwater, Worthing, and Mrs. HART, Glynde Horticultural School, won first and second prizes respectively for a table decoration in natural flowers and foliage. Mrs. A. COOPER was awarded first prize for a dinner table decoration of Chrysanthemums only, the second prize being taken by Mrs. A. M. SWANN, and the third by Miss M. A. RHODES. The last-named competitor excelled for an epergne of flowers, while Mrs. B. C. MARTIN, West Hill Place, Brighton, led in the class for a basket of Chrysanthemums arranged with autumn foliage.

There were numerous entries in the Championship class for a collection of nine distinct kinds of vegetables, open to the County of Sussex, and here Mr. W. SINFIELD, Brighton, won the premier award, while Mr. C. D. SEARLE, and Mr. C. GRINSTEAD, both of Eastbourne, won the second and third prizes respectively. Mr. SINFIELD was successful in several of the classes provided by seedsmen, and also secured premier honours for four dishes of Potatoes, for Brussels Sprouts, and for Leeks. Mr. J. H. MANTON was another very successful exhibitor of vegetables, winning the first prize in the open class for six distinct kinds, and coming second to Mr. E. CARPENTER for Parsnips. Mr. W. ANSELL, Rottingdean, led in the class for six Onions, and VISCOUNT COWDRAY showed the best Cauliflowers.

Mr. Hogg, Iris Nurseries, Worthing, was the best exhibitor of two bunches of black Grapes, followed by Messrs. DOUGLAS BROS., LTD., Durrington, and C. T. CHANDLESS, Esq. For two bunches of white Grapes, the awards were made in the following order to Mr. E. CARPENTER, E. EZRA, Esq. (gr. Mr. P. Lisle), Partridge Green; and VISCOUNT COWDRAY. The best basket of twelve culinary Apples, one variety, was shown by Capt. E. T. HODGES (gr. Mr. E. Mockford), Cowfold, while W. J. YAPP, Esq. (gr. Mr. J. H. Manton), Beech Hurst, led for four dishes of dessert Apples, and Mr. A. MASON secured the chief award for four dishes of culinary Apples. In the class for two dishes of culinary Apples, Messrs. EASTWOOD AND SONS led, while C. T. CHANDLESS, Esq., was most successful in the class for two dishes of dessert Apples. Dessert Pears were best shown by Mr. H. H. PARSONS of Lewes, and stewing Pears by Mr. A. O. COSHAM.

The following awards were made to non-competitive displays:—

Gold Medal.—To Messrs. KEITH LUXFORD AND CO.; Messrs. SUTTON AND SONS; Messrs. DANIELS BROS.; Messrs. J. CARTER AND CO.; THE PREMIER SEED CO.; Mr. H. HEMSLEY;

Mr. S. GRIFFIN; Mr. F. WOOLLARD; Messrs. J. CHEAL AND SONS; Messrs. W. BALCHIN AND SON; and Mr. W. C. BRIGHT.

Silver-Gilt Medal.—To the GLYNDE HORTICULTURAL SCHOOL; Messrs. G. MILES AND SON; and Mr. A. G. VINTEN.

Silver Medal.—To Messrs. MAXWELL AND BEALE; Messrs. ALLWOOD BROS.; Messrs. BURFOOT BROS.; Mr. B. PINNEY; and Mr. R. HIBBEN.

ST. ALBANS GARDENERS'.

ON Thursday and Friday, November 12 and 13, the St. Albans Gardeners' and Allotment Holders' Association held its annual exhibition of flowers, fruit and vegetables at the Drill Hall, St. Albans.

The exhibition was the largest and one of the most successful the Society has hitherto had. In all the classes the exhibits were of excellent quality. In particular we refer to the classes for Apples and Chrysanthemums. In the latter there were many fine blooms, and the prize for the premier bloom was awarded to C. H. OSBORNE, Esq. (gr. Mr. Prail). The cottagers' and allotment holders' classes were well filled.

The HERTFORDSHIRE INSTITUTE OF AGRICULTURE displayed specimens of garden insect pests, and gave demonstrations of pruning and other operations in fruit culture. The St. ALBANS AND DISTRICT BEE KEEPERS' ASSOCIATION showed an observatory hive and other bee-keeping appliances. These last two exhibits were a new and welcome part of the exhibition.

The total number of entries was 360. Most of the exhibits, by the kindness of the exhibitors, were sold at the close of the second day in aid of St. Albans and Mid-Herts Hospital, by Mr. S. Pryce Harding, the Society's honorary auctioneer, and a large sum was realised. The Society owes much to its Secretary, Mr. W. J. Jennings, and its general committee. Col. F. E. Fremantle, M.P., opened the exhibition on the first day, and the Mayor of St Albans distributed the prizes.

THE ORCHID CLUB.

THE first meeting of the new session of the Orchid Club was held on the 13th inst, and notwithstanding very severe weather, was the occasion of a most excellent and interesting display of Orchids—Odontoglossums, Cypripediums and species being the dominant features. At the meeting of the committee sympathetic reference was made to the loss by death of Mr. P. Smith, who was a member from the inception of the Club. Three new members were elected.

The large attendance of members and friends was an encouraging indication of an increasing interest in Orchid culture and in the work of the Club.

PREMIER DIPLOMAS.

Cypripedium Brigadier Beckton's var. (C. Gaston Bultel × C. Leeanum Keeling's var.). The large, square, dorsal sepal is three inches in transverse diameter, incurving slightly at its lower part, and of a rich burnt sienna colour with crimson speckling specially marked at the periphery where it merges into the white margin. The petals are one-and-a-half inch deep, and well-displayed, as in Gaston Bultel; these, together with the lip, are similar in colour to the dorsal sepal. The flower is carried on a tall spike.

Dendrobium Phalaenopsis alba, Beckton's var. The finest white variety known to be in cultivation; the flowers are three inches across, of excellent shape, pure white, with a greenish tinge in the throat of the labellum.

GROUPS.

Mrs. HARDY showed a selection of choice Odontoglossums and Odontiodas carrying full spikes, including fine varietal of Odm. crispum Rosalind (Empress of India × Rossendale), many fine forms of O. crispum xanthotes and

the brilliant Oda. Maureen. A finishing touch was given to the group by an edging of Oncidium cheiroporum.

Mrs. STOCKWELL (gr. Mr. G. Weaver), sent a small group of well-grown Cypripediums. D. CRAVEN MOORE (gr. Mr. W. Gilden), staged a selection of Cypripediums and very fine varieties of white hybrid Odm. crispum. The former included C. Mme. A. Ferriervars. Chardwar and Oxford, C. Nirvana, C. Corsair, C. Goliath, C. Maudiae and several fine specimens of the yellow C. insignis Sanderae Kimball.

A. T. CUSSENS, Esq. (gr. Mr. A. Dalgleish) showed a beautiful group in which many plants of a specially fine variety of Cypripediums Maudiae were conspicuous. It also included a good C. Olympus, Selenipedium Dominianum and the only example of Cymbidium, viz. C. Doris magnificum, represented by a well-grown plant carrying three full spikes.

B. J. BECKTON, Esq. (gr. Mr. W. A. Stewart), staged a group of Cypripediums and various species; among the latter were several strong plants of Epidendrum vitellinum, the beautiful little Pleurothallis astrophora, large baskets of Pleione maculata and P. humilis, Odontoglossum grande aureum, Rodriguezia crispa, the quaint Cirrhopetalum O'Brienianum, and a very good variety of Miltonia Roezlii.

F. T. PAUL, Esq., showed Cypripedium Golden Fleece, and the pretty little C. Tracery.

Obituary.

Mrs. Charles Dixon.—Many friends of the veteran gardener, Mr. Charles Dixon, will sympathise with him in the bereavement he has sustained by the death of his wife, whom he married ten years ago, when he was eighty-two years of age. The late Mrs. Dixon, like her predecessor, was formerly housekeeper at Holland House, Kensington, where Mr. Dixon was gardener for fifty-five years under three different employers. Mr. Dixon retired seven years ago, still enjoys good health and in favourable weather he is always busy in his garden at Sydenham.

Louis Lorette.—Many of our readers will regret to learn of the death, at the age of 79, which took place on the 17th September, at Armentieres, of M. Louis Lorette, formerly the head of the Horticultural Department of the Agricultural College at Wagnonville (Nord). M. Lorette developed a new system of pruning, known as the "Taille Lorette," which was greatly discussed about the year 1912, and which aimed at replacing winter pruning by pruning "in the green," and which certainly produced extraordinarily good results in the trees at Wagnonville. The controversy on the subject has now died down to a considerable extent, but there are many growers who have adopted the system with very good results.

Eugene Tisserand.—The death in Paris, at the age of 95, of Eugene Tisserand, removes a most interesting personality, who formed a link between present-day horticulture and that of the early and middle nineteenth century. The son of an officer in the "grande armée" of the first Napoleon, Tisserand early displayed a taste for agriculture, and in 1850 he entered the Institut Agronomique, at Versailles, where he had a brilliant career. After many successes, he finally became Director of Agriculture, remaining in that position until 1896. To him is due the organisation of French agricultural and horticultural education, and the second Institut National Agronomique in Paris was founded by him. His splendid work for French agriculture and horticulture was fully appreciated by the Government, at whose hands he received many honours, including that of the Grand Cross of the Legion of Honour. He remained active and energetic to the end, and his death will be mourned by countless students who have passed through the Paris institutes. He was laid to rest in Paris on November 3.

MARKETS.

COVENT GARDEN, Tuesday, November 17th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Erica gracilis	
cuneatum	10 0-13 0	48's per doz.	24 0-30 0
per doz.	10 0-12 0	nivalis, 48's	
elegans	9 0-10 0	per doz.	24 0-36 0
Aralia Sieboldii	30 0-42 0	Above varieties	
per doz.	30 0-42 0	in 60's, per	
Asparagus plu-		doz.	12 0-15 0
mosus	12 0-18 0	in Thumbs,	
Sprengeri	12 0-18 0	per doz.	9 0-10 0
Aspidistra, green	36 0-60 0	Marguerite, 48's	
per doz.	12 0-18 0	per doz.	15 0-18 0
32's	24 0-30 0	Nephrolepis in	
nidus	12 0-15 0	variety	12 0-18 0
Cacti, per tray,		32's	24 0-36 0
12's, 15's	5 0-7 0	Palm, Kentia	30 0-48 0
Chrysanthemum		60's	15 0-18 0
themum, pot		Pteris, in variety	10 0-15 0
grown, in vari-		large 60's	5 0-6 0
ety, 48's, per	15 0-24 0	small	4 0-5 0
doz.	30 0-45 0	72's per tray	2 6-3 0
Crotons, per doz.	30 0-45 0	of 15's	12 0-15 0
Cyclamen, 48's		Solanum, 48's,	
in variety, per	24 0-30 0	per doz.	12 0-15 0
doz.	24 0-30 0		
Cyrtanthium	10 0-25 0		

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum deco-		French Flowers	
rum, doz. bun.	9 0-10 0	Narcissus	
cuneatum, per		Paper White,	
doz. bun.	6 0 8 0	per doz. bun.	4 0 4 6
Arums (Richar-		Narcissus	
dias) per doz.	8 0-10 0	Solid d'Or,	
Asparagus plu-		per doz. bun.	4 0 5 0
mosus, per		Parma Violets,	
bun., long		per bun.	4 0 5 0
trails, 6's,	2 0 3 0	Ranunculus,	
med. sprays	1 6 2 6	scarlet, per	
short	0 9 1 3	doz. bun.	5 0 8 0
Sprengeri, per		carmine, per	
bun.	1 6-2 0	doz. bun.	5 0-6 0
long sprays	1 0 1 6	orange, per	
med.	0 4 1 0	doz. bun.	10 0-12 0
short	0 4 1 0	Chillies, red	
Bouvardia,		and yellow,	
white, per		per pad	5 0 6 0
doz. bun.	12 0-15 0	Solanum	
Camellias, white		berries, per	
per box, 12's	3 0 3 6	pad	10 0-12 0
Carnations, per		Gardenias, per	
doz. blooms	3 6 5 0	box, 12's, 18's	6 0 9 0
Chrysanthemum		Heather, white,	
white, large		per doz. bun.	10 0-12 0
blooms, per		pink, per doz.	
doz.	5 0-6 0	bun.	9 0-12 0
yellow, large		Honesty, per	
blooms, per		doz. bun.	18 0-30 0
doz.	5 0-6 0	Lilac White, per	
pink, large		doz. sprays	8 0-9 0
blooms, per		Lilium longiflorum	
doz.	5 0-6 0	long, per doz.	5 0-5 6
bronze, large		speciosum	
blooms, per		album, long,	
doz.	4 0-5 0	per doz.	4 0 5 0
above colours		short, per doz.	4 0
medium blooms,		speciosum	
per doz.	3 0 4 0	rubrum, long,	
white spray		per doz.	3 6-4 0
per doz. bun.	15 0-18 0	blooms	
yellow spray,		short, doz.	
per doz. bun.	12 0-15 0	blooms	2 0-2 6
pink, spray,		Lily-of-the-Valley,	
per doz. bun.	12 0-15 0	per doz. bun.	24 0-36 0
bronze spray,		Orchids, per doz.	
per doz. bun.	0 0-12 0	Cattleyas	24 0-30 0
Croton leaves		Cypripediums	5 0-7 0
per doz.	0 0 2 6	Roses, per doz.	
Fern, French,		blooms, Rich-	
per doz. bun.	10 0-12 0	mond	6 0-8 0
French Flowers		Liberty	6 0-8 0
Acacia (Mimo-		Madame	
sa) per doz.		Butterfly	6 0-8 0
bun.	12 0-15 0	Madame Abel	
Anemone De		Chatenay	3 6 4 6
Caen, per doz.		Melody	6 0-8 0
bun.	12 0-15 0	Molly Sharman	
Eucalyptus, per		Crawford	3 0-4 6
pad	5 0 6 0	Ophelia	6 0-8 0
Marguerites,		Sunburst	6 0-8 0
yellow, per		Smilax, per doz.	
doz. bun.	2 6 3 0	trails	3 0-3 6
		Violets	3 0-5 0

REMARKS.—Supplies from home growers have been greatly reduced and prices have advanced accordingly. Roses, as anticipated, advanced in price during last week from 4- to 8- and 9- per dozen, and many orders could not be executed owing to a shortage during Wednesday and Thursday last. There was an extra demand for red Roses for Armistice Day. Carnations of best quality have realised 5- to 6- per dozen blooms but no further advance in price is expected for the present although supplies are generally short. Lilium longiflorum appeared more plentiful this morning, but its price remains firm. Lilium lancifolium album and L. l. rubrum are much

shorter in quantity, and the supply of Richardias (Arums) is insufficient for the demand. Amongst Chrysanthemums white blooms have become suddenly scarce, but a fair quantity of coloured blooms are still available. Single varieties are fairly numerous and help to relieve the situation. The newest subject in the pot plants department is *Erica hyemalis*, but *E. nivalis* and *E. gracilis* are receiving much attention from buyers. There is a good supply of pot-grown Chrysanthemums, also Solanums in 48's and 60's; these are now in excellent condition and there are also some fine plants of Cyclamens, Begonia Gloire de Lorraine and Roman Hyacinths have been on sale during the past week. Trade shows a little improvement in this department, but no doubt the colder weather will cause the supplies to shorten for a few days.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Asparagus —		Lettuce, round, per	
—Paris Green...	9 0-10 0	crate ...	6 0 7 0
—Spruce ...	1 6-2 0	Mushrooms,	
Batavia ...	2 0-2 6	cups ...	3 6-5 0
Beans—		—Broilers ...	2 6-3 6
—French, per		Onions—	
basket ...	4 0-6 0	—Dutch ...	7 0-7 6
—Madiera, per		—English, per	
basket ...	4 0-6 0	cwt ...	9 0-10 0
—Forced, per lb	1 0-2 0	—Valencia ...	8 6-10 0
Beets, per cwt.	6 0-8 0	Parsnips, per	
Cabbage, per		cwt ...	5 0-6 0
tally ...	6 0-10 0	Potatoes—	
Celery, per doz.		—King Edward,	
fans ...	16 0-30 0	per cwt ...	5 0-7 6
Cauliflowers, per		—others ...	4 0-6 0
doz ...	2 0-4 0	Sprouts, per 1	
Carrots, per bag	6 0-9 0	bag ...	3 0-4 6
Chicory, Belgian		Savoys, per doz.	1 9-2 6
per lb ...	0 3-4 4	Tomatoes, English,	
Cucumbers, per		per strike—	
doz ...	8 0-10 0	—pink, new crop	6 0-10 0
Dutch Onions ...	8 0-9 0	—pink, old crop	2 6-4 0
Endive, per doz.	2 0-2 6	—blue ...	2 0-6 0
Horse-radish, per		—Guernsey ...	2 0-6 0
bundle ...	1 3-2 0	—Jersey ...	2 0-6 0
Lettuce, per doz.	—	—Dutch ...	2 0-3 0
—cabbage ...	1 0-1 6	—C a n a r y	
—French Cos,		Island ...	15 0-20 0
per doz ...	7 0-8 0	Turnips, per cwt.	5 0-6 0

REMARKS.—A fairly steady inquiry for produce has been experienced during the week, most sections reporting slightly improved conditions. Supplies of English Apples of the first grade are not plentiful, but even so, there is practically no advance in their prices. Allington Pippin is a particularly unpopular variety at the moment, small fruits not being wanted at any price. Grapes are inclined to be cheaper, mainly due to increased supplies from Belgium and the colder weather. A few English Pears are still being marketed, but the bulk of supplies are from California. English Tomatoes show some falling away in quantity, and the trade is now looking to the Canary Islands for their supplies. Cucumbers are scarce and dear, Mushrooms are a moderate supply and their prices are comparatively high, with the result that Paris is sending increasing quantities; the rate of exchange is also probably responsible. New Potatoes are not moving so freely, those from Scilly meeting a very poor demand. Guernsey and Worthing forced Beans are selling at satisfactory prices, but prices for Madiera and French Beans are inclined to be unstable. Salads are selling moderately well. Green vegetables are a better trade and an improvement in prices is expected. Improved conditions are apparent in the Potato trade.

GLASGOW.

The cut flower market was quieter during the past week, and prices of Chrysanthemums were easier. Several factors contributed to the reduction in business. The demand for flowers in connection with Armistice Day was disappointing, frost and fog interfered with shopping, and the fact that it was rent week had also an adverse influence. Sprays ranged from 2d. to 8d., and disbudded blooms made the following values:—Almirante and Jean Patterson, 6d. to 1/- for 6's; Yellow Thorpe, 6d. to 1.1. White Thorpe, 8d. to 1.3; La Pactole, 8d. to 1/-; Betty Spark, 9d. to 1/-; Cranford Pink, 6d. to 10d.; and Blanche du Poitou, 8d. to 1.2. Medium quality Carnations were worth from 2.9 to 3.6 per dozen, and best from 4/- to 5/-. Roses were dearer, Madame Butterfly and Ophelia making 5/- to 6/-; and Richmond and Mrs. H. Stevens, 3/- to 4/-. Lilliums kept steady, *L. longiflorum* (Harrisii) at 4.6 to 5.6; *L. lancifolium rubrum*, 1.6 to 2.6; and Richardias, 3/- to 5/-. Lily-of-the-Valley brought 1.9 to 2.3 per bunch, and Parma Violets, 1.6 to 3/-. Asparagus Fern sold at 3d. to 9d. for small, and 9d. to 1/- for large bunches, while Smilax varied from 1/- to 1.6.

The feature of the fruit market was the advance in prices of American Apples. Barrels of Canadian, Virginian, Washington, Oregon and British Columbian varieties commanded 2/- more, and cases registered an average gain of 1/-. English-grown fruit was also dearer. Bramley's Seedling being worth from 16/- to 18/- per cwt.; Warner's King, 17/- to 20/-; and Lane's Prince Albert, 16/- to 20/-. Winter Nells Pears made 28/- to 32/- per case.; Jersey Doyenne du Comice, 10d. to 1/- per lb.; and Pittmaston Duchess, 8d. to 10d. Lemons remained dear at 15/- to 17/- per box and 24/- per case, while Jamaica Oranges averaged 20/- to 22/-, and South African, 20/- to 24/-. Grape Fruit was unchanged at 22/- to 25/-. Prices of Grapes reflected little change. English Alicante being quoted at 1.3 to 1.9 per lb.; Gros Colmar, 2/- to 2.9; and Scotch Gros Colmar, 2/- to 3.6.

The only notable movement in the other section of the market was the decline in Scotch Tomatoes from 1/- and 1/2 per lb to 9d. and 11d.

ANSWERS TO CORRESPONDENTS.

APPLES DISEASED. *G. E. G.* On both the Apples sent there was, at the time the specimens were sent, the same fungus in an immature condition. The Apples were kept in culture, and the fungus slowly developed its fructifications. These agreed in all respects with those of *Sphaeropsis malorum*—known as the "black rot" of Apples in the U.S.A.—except that even by October (when the Apples began to decay from other causes) the spores remained colourless. If further examples exist, they should be sent for investigation.

CYCLAMEN AND VINE WEEVILS. *Cyclamen*. (1) When Cyclamens commence to flower, the plants may be fed with weak liquid manure made from cow or horse manure, once or twice a week if they require watering so often. If manure is unobtainable, a sprinkling of Clay's fertiliser may be given each pot once a fortnight, just before watering. (2) The weevils do sometimes lay their eggs in farmyard manure, and the legless, white, hairy maggots may be found in the manure when that has been used in the potting soil. Vegetable manures, therefore, may be said to attract the mother weevils; but apart from the odour of decaying vegetation indicating food, it could scarcely be said that strong odours would attract them. Indeed many odours serve to drive insects away. (3) There are two vine weevils, namely, Black vine Weevil and Clay-coloured Weevil. They lay eggs about May, the egg gives rise to the maggots which feed on the roots of plants from about August till the following spring when it changes to a yellowish-white pupa in April, and this reaches the perfect state or weevil in about a fortnight later. (4) The maggots may sometimes be found by turning sickly-looking plants out of their pots. The perfect weevil may be trapped by laying pieces of sticky board on the benches amongst the plants over night, and looking for the weevils in the morning. Another plan is to lay pieces of white paper or cloth under a number of the pots during the afternoon, go into the greenhouse with a dark lantern at night, and suddenly flash the light on the plants, when the weevils will drop on the white material; they should be gathered up quickly and destroyed.

GROWTH ON A ROSE BUSH.—*W. P.* The specimen you send is "Robin's Pincushion," or Bedeguar Gall, caused by *Rhodites Rosae*. Each gall is composed of a number of cells in each of which is a white larva. If these galls become very numerous on your Roses, it may be necessary to cut off the shoots bearing the galls whilst the larvae are still contained in them. By destroying these the number of *Rhodites* will be lessened for the following season.

NAMES OF FRUIT. *G. F.* 1, Fearn's Pippin; 2, Cox's Orange Pippin; 3, Dumelow's Seedling (syn. Wellington); 4, Scarlet Pearmain; 5, Easter Pippin; 6, Striped Beefing; 7, Cellini; 8, King of the Pippins; 9, not recognised; 10, Alfriston; 11, Franklin's Golden Pippin; 12, Warner's King; 13, Marie Louise. *B. E. F.* 1, Ashmead's Kernel; 2, Claygate Pearmain; 3, Harvey's Wiltshire Defiance; 4, Bedfordshire Foundling; 5, Dumelow's Seedling (syn. Wellington); 6, Gloria Mundi; 7, Golden Pippin; 8, Wyken Pippin; 9, Rymer; 10, Golden Reinette; 11, Pear Fondante d'Automne. *T. E. P.* Winter Strawberry. *H. M. Melrose. D. W.* 1, Warner's King; 2, Dumelow's Seedling (syn. Wellington); 3, not recognised; 4, Lane's Prince Albert; 5, Blenheim Pippin; 6, Lincoln Codlin; 7, Allington Pippin; 8, Fondant du Comice; *Wentworth.* 1, Herefordshire Pearmain; 2, White Westling; 3, Northern Greening; 4, French Crab; 5, Yorkshire Greening; 6, Hanwell Souring. *W. D. and S., Ltd.* 1, Flower of Kent; 2, Striped Beefing. *E. W. S.*

1, New Bess Pool; 2, Warner's King. *P. C.* Apples: 1, King's Acre Pippin; 2, Wyken Pippin. Pears: 3, Knight's Monarch; 4, Beurré Diel. *W. F.* Gascoyne's Scarlet.

NAMES OF PLANTS. *T. E. M.* 1, Abutilon vaxillarium var. variegatum; 2, *Acacia armata*; 3, *Cytisus fragrans*; 4, *Deutzia gracilis* (?); 5, *Lapageria rosea*; 6, *Francia ramosa*; 7, *Grevillia robusta*; 8, *Centaurea rutifolia*; 9, appears to be a *Juniperus* in the juvenile stage; 10, *Rhodostachys pitcairniæ-folia*; 11, *Cordylina stricta*; 12, *Begonia semperflorens* var.

SOIL FOR A TENNIS LAWN.—*E. Parks.* The analysis of the soil you send shows that it is not by any means a bad one, and that it could easily be rectified. The chemical constituents of ordinary garden soil vary endlessly as the mechanical composition varies. The following is the composition of a loam soil (Hop soil) from Kent:—Loss on ignition, 5.07; oxide of iron, 3.63; alumina, 3.51; carbonate of lime, 1.48; sulphate of lime, 0.34; magnesia, 0.42; potash, 0.30; soda, 0.01; phosphoric acid, 0.10; insoluble silicates and sand, 85.14; making in all 100.00. The total nitrogen taken from the soil before burning was 0.19, equal to ammonia 0.23. By comparing this with your analysis it will be seen that your soil contains more humus, rather less nitrogen, more silicious matter, less lime, four times as much phosphoric acid, but a little less potash. The Hop is a deep rooting plant and less liable to suffer from drought than grass. To favour the growth of the grass add say two inches of clay or heavy loam all over the ground, and mix it evenly with the sandy material. Humus could be increased to the advantage of the grass by adding any good black loam that can be procured, leaf-mould and decayed vegetable matter. All these ingredients should be mixed in a heap before spreading them over the ground. Finely powdered chalk scattered over the ground at the time of the digging would supply lime, and be more suitable than quicklime for the rather sandy loam. Plant food could be supplied by dressing the ground with two ounces each of superphosphate of lime and kainit, and one ounce or less of sulphate of ammonia to the square yard, once or twice a year. The chief difficulty will be in getting the soil to retain moisture in summer, but all lawns played upon require watering. When the lawn is in order it may be top-dressed with any black soil and well-decayed manure in autumn.

Communications Received.—*H. T. W.*—*P. N.*—*C. R.*—*S. J.*—*S. M. B.*—*W. B. G.*—*R. H. J.*—*N. G. H.*

THE WEATHER IN SCOTLAND.

DURING the past month the weather conditions may be summed as having been "mild" throughout. The temperature during the period was always above normal, the mean maximum being 55.8° and the mean minimum 43.3°, giving an average mean of 49.55°, which is about 3° higher than the average monthly (October) average for the district. Remarkably high shade temperatures—70° and 71°—were recorded on the 3rd and 5th respectively. The highest (screen) minimum temperature, 50°, was recorded on the 6th, and the lowest minimum, 29°, on the 16th. Ground frost occurred on four occasions, the lowest reading—22°—being noted also on the 16th. The soil temperature—one foot deep—varied from 52° at the beginning of the month down to 44° on the 17th. Towards the end of the month this rose to 47°. The mean barometric pressure was 1009.5 millibars (29.81 inches). During the first half of the month a fairly high pressure was maintained, 1033 millibars being reached on the 8th. From the 21st to the 27th the pressure was very low, only 990.6 millibars (29.35 inches) being recorded on the 23rd. The total rainfall for the month was 2.28 inches, which is slightly below normal. This was distributed over eight "rain" days, and six days when the fall was less than 1 m.m. The wettest day was the 22nd, when almost half-an-inch (.48) was recorded. The total sunshine for the month was 110.6 hours, giving an average of 3.57 hours per day, or a percentage of 34. The brightest day was the 9th, with 9.2 hours. The winds were mainly south-westerly and very moderate in force, except on the 3rd, when the wind might fairly be termed "high." *William McClelland, Director of Studies, Training College Gardens, Mayfield, Dundee.*

THE Gardeners' Chronicle

No. 2031.—SATURDAY, NOVEMBER 28, 1925

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 41.1°

ACTUAL TEMPERATURE—
The Gardener's Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, November 25, 10 a.m. Bar. 30.0 Temp. 38°. Weather Sunny.

BRITISH gardeners are fortunate in that they have in *The Gardener's Assistant* and in Nicholson's *Dictionary of Gardening* two encyclopaedic works which treat of the whole craft of gardening in an authoritative manner. With guides such as these, if those who run gardens will but read, they should find no difficulty in both growing and knowing garden plants. *Thompson's Gardener's Assistant* has long been, as the preface to the new issue states, the guide, philosopher and friend of British gardeners. The admirable edition which has now been published will, we are confident, prove no less trusty a monitor to present and future generations of gardeners. Although, out of pious memory of great gardeners of past time, we are apt to think and speak of gardening as though it consisted of a body of doctrine established long ago, it is nevertheless true that gardening is an art which, like the plants it tends, is ever growing.

* *The Gardener's Assistant*. Edited by William Watson; six Volumes. The Gresham Publishing Company, Ltd., 68, Chandos Street, W.C.2. Price £2.15.0.

Since Thompson, in 1859, planned the first edition of the *Assistant*, vast numbers of new plants have been introduced, the science of botany has made remarkable progress, plant-breeding has been put on a secure basis, and soil physics established as a new and important branch of scientific horticulture. Although it is true that not every discovery in natural science has an immediate bearing on the art of cultivation, it is nevertheless true that those who undertake to instruct others in gardening cannot afford to fail to keep abreast of scientific progress. It is good to see that in the new edition the important articles on botany and soil science have been re-written and brought thoroughly up to date. In the articles on the former subject by Sir Frederick Keeble gardeners will find a simple exposition of the Mendelian principles of plant breeding whilst the contribution on soils and manures by Lt.-Col. S. P. Auld contains probably the best summary of certain recent knowledge of these that has yet been written. The present work therefore, although in the direct line of descent from that given birth to by Thompson, has undergone so many and important modifications that it is to all intents and purposes a new work. It is therefore right that the man who organised and himself contributed largely to the happy evolution of *The Gardener's Assistant* should give his name to the new work. Those who knew the late William Watson, who recognise what a great gardener he was and who realise by a perusal of the new issue how admirably he did the work of making the old *Gardener's Assistant* a compendium of modern gardening-knowledge, will both admit his title to the honour and deplore the stroke of fate which took Watson from us before the last pages of his great work had passed the printer's hands. *The Gardener's Assistant* owes much to Watson and much also to the contributors, whose names make a truly remarkable list:—E. Beckett, who writes of the fruit and vegetable garden; Lewis Castle, who treats of the orchard; James Hudson, whose articles on fruits prove that he knows as well how to impart knowledge as to apply it; A. Ward, who writes on Grape vines; John Fraser, who never having had an enemy himself writes of insect and other plant enemies; John Weathers, who gives an account of tools and instruments which every young gardener should read, mark and learn; W. J. Bean, who speaks from the fulness of knowledge on ornamental trees and shrubs and their treatment; W. Goldring, who discourses of flower gardens and pleasure grounds, teaching others the art which he practised so well; I. Lynch, one of the greatest plantsmen of his day, who describes herbaceous, alpine and annual plants; A. D. Webster, who having done so much to make our parks rival in beauty the greatest of private gardens, reveals the whole art of bedding—which some despise, but all practice; and James O'Brien, who in his hale old age delights the reader with his account of Orchids, to the study of which with amazing singleness and firmness of purpose he has devoted and still devotes his life. Other great gardeners—no less distinguished recruits to this army of pastmasters and veterans—prove by their contributions that the present generation no less than the past, whatever the pessimists may say, is maintaining with faithfulness and extending by enthusiasm the craft of gardening. No less than the contributors, the publishers are to be congratulated on the excellence of the work. The six volumes, each of some two hundred pages, are so beautifully printed and illustrated that it is a real pleasure to use them. Beside the numerous illustrations

in black and white there are many illustrations in colour, all of a high standard of excellence and some among the best that we have ever seen. With these pleasing aids to study the volumes are bound to win the attention and affection of all gardeners. Watson's *Gardener's Assistant* is a work which should find a place in every gardener's library and where it does we are convinced that it will rarely be left lying on the shelf. We would especially recommend young gardeners to acquire a copy and to peruse it thoroughly. If they do they will add greatly both to their knowledge of gardening and to the pleasure which they derive from following the most attractive of all crafts. No less than the professional gardener, the amateur may make use of this most admirable of "assistants"; handy, capable, and always ready with useful suggestions, whether it be in the selection of a site, the draining and preparing of it, its laying out and planting, until the garden has become a perfect thing, delightful alike in the unity of its plan and in the diversity of its contents; a little world giving shelter and solace, breathing contentment, revealing always some new enterprise; for it is only in his own garden that a man may find contentment without losing ambition. *The Gardener's Assistant* will ensure for him the achievement of the one and the quickening of the other of these virtues—for it, like Goldsmith's immortal schoolmaster, "allures to brighter worlds and leads the way."

Presentation to Mr. A. B. Lister.—At the annual meeting of the Lea Valley and District Nurserymen's and Growers' Association, Mr. A. B. Lister, the secretary, was presented with a cheque for £250 in recognition of his valued services. Mr. Lister has been secretary of the Association since 1914, and was also Director of the Experimental Station from that year until Dr. Bewley was appointed to that office.

Plant Breeding in Scotland.—At a meeting of the Scottish Society for Research in Plant Breeding, held at Edinburgh on Wednesday, Mr. James Elder presiding, it was reported that under arrangements with the three agricultural colleges in Scotland, half-acre plots of glebe Oats had been grown for trial in nineteen different districts of Scotland, and it was decided to continue the trials on a larger scale next year. Potatoes were grown on two acres at East Craigs; 322 selections, one year or more from seed were included in the experiments, and about 1,200 seedlings were raised from seed, and selections from them have been retained for further experiment. In order to carry out the experiments, a piece of ground had been rented near Kirknewton, and a grant of £600 had been promised by the Board of Agriculture towards defraying the cost during the first year.

Presentation to Mr. Donald McKelvie.—An interesting function took place in the Douglas Hotel, Brodick, on Friday, November 20, when Mr. Donald McKelvie, Lamlash, was entertained to a complimentary dinner by the Arran Farmers' Society, and presented with a full length portrait in oils by Mr. Greiffenhagen, in recognition of his services to agriculture, more especially in connection with the raising of new varieties of Potatoes. The Marquis of Graham presided over a representative company, which included Mr. McCullum of the Board of Agriculture for Scotland, and Mr. Kirkwood of the West of Scotland Agricultural College. In making the presentation, the chairman referred to Mr. McKelvie's wonderful record as a Potato-breeder which began in 1907 when he produced the famous Arran Chief. It was a case of great things having their origin in small beginnings, for it was an outstanding fact that he had accomplished so much when

occupying so little land. It was doubtful if they in Arran had appreciated or even knew the vast amount of patience, work and scientific knowledge involved in the production of new varieties of Potatoes. In the course of his reply, Mr. McKelvie said it was nearly thirty years since he had taken up Potato-growing, a subject which he knew nothing about at the time. His first venture was in 1906, and his earliest sorts he sold at 20/- per ton, but subsequently he obtained better varieties. He emphasised the importance of breeding healthy stocks, and made passing reference to the assistance received from good neighbours in the early days of his experiments.

The Horticultural College, Swanley.—An ordinary general meeting of the Horticultural College, Swanley, was held on Tuesday, November 17, at 11, Stanhope Place, London the residence of Kathleen, Viscountess Falmouth, Chairman of the governing body. In referring to the Governor's Report, Lady Falmouth stated that the College was quite full, and applications from abroad were continually being received. Three students had obtained the degree of Bachelor of Science in Horticulture last year. One was now in charge of the floricultural work at the Ambler School of Gardening, Pennsylvania, and another was teaching at the County Secondary School in Cambridge. The high standard of work at the College had been maintained, and every year the equipment became more and more efficient. At the same time, the Governors were glad to be able to announce that the financial position of the College was quite satisfactory, but they desired to spare no efforts in appealing for funds for scholarships, which were urgently needed. Dr. William Bateson, F.R.S., Director of the John Innes Research Institute, had been appointed a member of the governing body. The meeting closed with a vote of thanks to the chairman, which was proposed by Sir John Cockburn, K.C.M.G., seconded by Mr. W. G. Lobjoit of the Ministry of Agriculture and Fisheries, and carried unanimously. Among those present were Miss Hannah F. Cohen, Miss M. M. MacQueen, Dr. Bateson, Sir Herbert Cohen and Miss Barratt, D.Sc., Principal of the College.

Exchange of Plants between London and Tokyo.—London County Council proposes to send to the municipal authorities at Tokyo, Japan, about 100 British Oak trees, 10 specimens of various shrubs in the Council's nursery at Avery Hill, which are not grown in Tokyo, and two pounds weight each of seeds of *Crataegus Cotoneaster* and Oak, besides certain flower seeds. In exchange for these the municipality of Tokyo will be recommended to send 100 trees of *Prunus yedoensis*, 20 specimens each of five or six kinds of Japanese Oaks, and 20 pounds weight of seeds of various trees. The proposal originated during a visit to this country of Mr. K. Inoshita, Chief Superintendent of the Bureau of Parks and Cemeteries of Tokyo. *Prunus yedoensis* is the Cherry extensively planted in Tokyo as a street tree, of which it is stated that some 5,000 exist in the city and precincts. Wilson refers to *Prunus yedoensis* in *Plantae Wilsonianae* as a tree generally cultivated in the gardens of Tokyo and said to have been introduced from the Isle of Oshima in the province of Izu.

Award of the Symons Gold Medal.—The Council of the Royal Meteorological Society has awarded the Symons Gold Medal for 1926 to Lt.-Col. Ernest Gold, D.S.O., F.R.S., Assistant Director of the Meteorological Office. The medal is awarded for distinguished work in connection with meteorological science.

Legacy to the National Rose Society.—The late Mr. Richard Foley Hobbs, Thornlow, Worcester, who died on May 4 last, bequeathed £100 to the National Rose Society, the income therefrom to be used for a Mrs. Foley Hobbs memorial prize. Mr. Hobbs also bequeathed all his 1896 port wine and four diamond cut-glass decanters to the Hanley Bowling Green Club. Mrs. Foley Hobbs is commemorated by a beautiful ivory-white Tea Rose which bears her name and was raised by Messrs. Alex. Dickson and Sons, in 1910.

Queen Alexandra.—Horticulturists have special cause to deplore the death of our beloved Queen Alexandra which occurred on Friday, November 20. She was one of the most beautiful characters in our country's history, and her kindness, grace and charm endeared her to all classes of the realm. She was deeply interested in our craft and gave it her fullest patronage and support. Truly she who loved beautiful Roses had beautiful Roses in her heart, for this was reflected in her noble life, and horticulturists are proud that she found joy and pleasure in the delights the garden affords. Her charming estate at Sandringham testifies to her interest and joy in plants and flowers, but even more than this we know how much she enjoyed visiting flower shows, where she lingered long admiring the exhibits and congratulating those whose efforts made a special appeal to her. The exhibitions at the Inner Temple Gardens and later at the Chelsea Hospital grounds found her one of the earliest visitors,



QUEEN ALEXANDRA.

and how much these visits meant to the success of these flower shows it would be difficult to say, for her royal patronage and that of her consort gave these exhibitions great prominence in the social world and showed the general public that they were worthy of the admiration of kings and queens. No less than the Royal Horticultural Society, of which her late Majesty was a patron, the National Rose Society loses one of its most conspicuous supporters, for of this society she was also a patron. The Rose exhibitions likewise attracted Queen Alexandra, and her early visits to the summer shows of the N.R.S. may be likened to a formal opening of them by Her Majesty. It is gratifying to know that one of the most beautiful Roses of recent years will serve to perpetuate her name in the minds of rosarians, and we believe that two older varieties were named in her honour, while in another connection with Roses, that of Alexandra Rose Day, she achieved the greatest success of any similar charitable pageant in this or any other country. Her sympathy and generosity are household words, and it is not surprising to know that the late Queen Mother was a patron of both our gardening charities, to the funds of both of which she contributed. In many portraits of this noble lady she is associated with Roses—ample proof of her love of nature and her claim to be regarded as "The Lady of the Rose."

Flower Pictures at the "Englishwoman" Exhibition.—The annual *Englishwoman* Exhibition was held at the Central Hall, Westminster, during the ten days from the 12th to the 21st of November. It chiefly consisted, as usual, of pottery, woven stuffs, and other handicraft articles, but Miss Aumonier was there with her pretty garden scenes in water-colours. There were some restful views taken in Luton Hoo gardens, Bedfordshire, and also paintings of her own and other gardens at Golders Green. Miss Gladys Howse had a display of miniature gardens in bowls, furnished with dwarf trees and cacti, and Mrs. Evershed had some wonderful garden pictures done in needlework, so fine that at a distance the silks completely blended and gave the impression of an oil painting.

Elm Trees as a Memorial of a Police Conference.—The New York police have sent to the police of Liverpool, Manchester, Nottingham and Bristol, and to the Dublin Civic Guards, five small Elm trees to be planted in commemoration of the International Police Conference held in New York.

Horticultural Department in Roumania.—We learn from the *Revista Horticola*, the Roumanian horticultural journal, that Roumania now has a Department of Horticulture in connection with the Ministry of Agriculture, the head of which is Mr. D. I. Stefanescu, a former student of the Versailles College of Horticulture. The department has been instituted largely as a result of the campaign energetically carried on by the Roumanian Horticultural Society. The existence of the department dates from the 1st of January, 1925.

Mr. William Cuthbertson's Travels.—Mr. William Cuthbertson, V.M.H., who, with Mrs. Cuthbertson is making a trip round the world, has reached Kodoli, Kolhapur, India, whence he writes under date of November 1: "We arrived at Bombay on October 23 after a fine passage, and found the temperature 91° in the shade. We were met by my son-in-law, the Rev. A. Bryan, who helped us to get our baggage through the customs, and, after breakfast, acted as guide during a four hours' motor trip in and around the city. After lunch we proceeded to Poona, four hours' journey from Bombay, and about 2,000 feet up. On the Saturday morning I called early on Dr. Mann, Director of Agriculture in the Presidency, but although I called at 8.30 a.m. he was already out, and I could not see him until Sunday, just before he departed to Scinde, where there is a huge government irrigation scheme on the Indus, just below Sukkar, which will irrigate and fertilise 2,300,000 acres of land, 500,000 of which will be devoted to Cotton. Dr. Mann is personally responsible for all the experimental work connected with this scheme, but it must be a big job to get half-a-million acres ready for and planted with approved strains of Cotton. It appears that at present Indian Cotton is usually too short in the staple and therefore of low grade and purchased chiefly by the Japanese. The agricultural buildings at Poona are well-equipped for teaching and research work, and those in charge were most anxious to discuss Potato problems, as the Potato is a most important crop. On October 29, we arrived at Kodoli where my daughter, Mrs. Bryan, has a large modern bungalow, and where it is possible to sleep comfortably without the use of mosquito nets. My wife and I visited the schools of the American Presbyterian Mission and were duly garlanded with flowers in Indian fashion, as we were considered to be distinguished visitors. We are now between the hot and the rainy seasons. This morning, November 1st, I visited the best farm in Kodoli and saw wonderful crops of Bananas, Sugar Cane, Turmeric, Limes, Pawpaws and a plantation of vines bearing the leaf which is chewed with the Betel Nut. Irrigation is simple but effective, and carried out by the aid of two bullock teams. In the evening

we visited the local sugar mill where about fifty men and boys are employed, and paid at rates ranging from 8d. to 1/- per day. We saw the canes brought in from the field, each ten feet to twelve feet long; the basal six or seven feet went to the crushing machine, the next twelve or fifteen inches were reserved for planting, and the top, with its withered leaves is used for fuel. The raw juice is boiled and cooled, but before it becomes quite cold it is poured into moulds which hold about sixty pounds weight of raw sugar. We tasted the product in all its stages, to the accompaniment of chanting by the workmen, who also invoked the assistance of their gods to ensure the success of their work. From the brightness of this somewhat primitive mill we stepped into the darkness of late evening, got into my son's powerful motorcar and drove home to dinner—what a contrast! The farms about here are quite small, and the one we visited consisted of about fifteen acres, worked in three sections. We are thoroughly enjoying everything, especially the Oranges, which are the finest I have ever seen or tasted. The fruits are of good size, greenish-yellow and perfect in flavour and lusciousness, but I imagine they are too delicate to travel successfully to London.

Royal Horticultural Society's Examinations in 1926.—The dates for the examinations in horticulture conducted by the Royal Horticultural Society in 1926 will be as follow:—Written examinations:—General Examination (Seniors and Juniors), Wednesday, March 24; School Teachers' Examination (Preliminary and Honours), Saturday, March 27; National Diploma in Horticulture, Saturday, May 8. Practical Examinations.—Teachers' Honours, Friday, June 18 (and possibly also Thursday, June 17); National Diploma, Preliminary, June 22 and 23; Final, June 24 and 25. The attention of candidates is drawn to the fact that entries for the Diploma Examination must be received before January 1, 1926. Copies of the syllabus and entry forms may be obtained on request by sending a stamped addressed envelope, to the Secretary, Royal Horticultural Society, Vincent Square, London, S.W.1.

The Most Popular Apple.—It is not surprising to know that in the census taken at the Imperial Fruit Show as to the most popular Apple, the variety Cox's Orange Pippin headed the list. The number of persons who voted was 3,150, and the order of popularity of the varieties was as follows:—1st, Cox's Orange Pippin; 2nd, Blenheim Pippin; 3rd, Worcester Pearmain; 4th, Allington Pippin; 5th, Golden Russet; 6th, King of the Pippins; 7th, Macintosh Red; 8th, Jonathan. No fewer than seven persons were successful in placing the varieties in the correct order. While no one will dispute the claims of the first two varieties, it would be conceded by most growers that there are far superior sorts to Worcester Pearmain, Allington Pippin, Golden Russet, and King of the Pippins.

Prizes for Essays on Perpetual-flowering Carnations.—The President of the British Carnation Society offers the following prizes for the best essays on Perpetual-flowering Carnations: First prize, £2 10s.; 2nd prize, £1 10s.; 3rd prize, £1. Competition is open to amateurs, gardeners and nursery employees who are members, or who may become members, of the British Carnation Society. The treatment of the subject is left entirely to the discretion of the writers, who may discuss varieties of Carnations, culture and decorative value, just as they wish. The essays must consist of not fewer than one thousand and not more than fifteen hundred words and should be in the hands of the Hon. Secretary, Mr. P. F. Bunyard, 57, Kidderminster Road, Croydon, before February 28, 1926. Each competitor must adopt a *nom de plume* and enclose his or her name in a separate, sealed envelope. The essays will be judged by the editor of the Society's *Bulletin*, assisted by two gentlemen appointed by the committee. The three best essays will be published in the *Bulletin*, whilst others possessing merit may be published whole or in part.

Appointments for the Ensuing Week.—Monday, November 30: National Chrysanthemum Society's Floral Committee meets. Tuesday, December 1: Royal Horticultural Society's Committee's meet; Royal Caledonian Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting; National Dahlia Society's Committee meets at 4 p.m., at the R.H.S. Hall. Wednesday, December 2: Royal Agricultural Society's Council meeting; National Viola and Pansy Society's meeting. Thursday, December 3: Nottingham and Notts Chrysanthemum Society's meeting; Linnean Society's meeting. Friday, December 4: Manchester and North of England Orchid Society's meeting.

"Gardeners' Chronicle" Seventy-Five Years Ago.—*Hatfield House.*—The greenhouses and pits adjoin the reserve garden, and are prin-

presented here of the efficacy of sulphur, applied in subjugating the attacks of mildew on Grapes; spots indicative of the pest were observed on several bunches shortly before they began to colour. Flowers of sulphur were immediately dusted over every bunch in the house, and a further extension of the plague was effectually stopped. A large house apart from the range is devoted almost exclusively to the cultivation of Figs, the greater number of which are planted out in square bricked compartments. Three successive crops are annually ripened, the supply lasting from June until November. The houses are partially glazed with British sheet glass, sixteen ounces to the foot, and no ill effects have ensued from burning; a large number of Strawberries are potted for forcing. Melons and Cucumbers are grown in pits. Pine-apples are not at present cultivated in this establishment. *Gard. Chron.*, November 30, 1850.

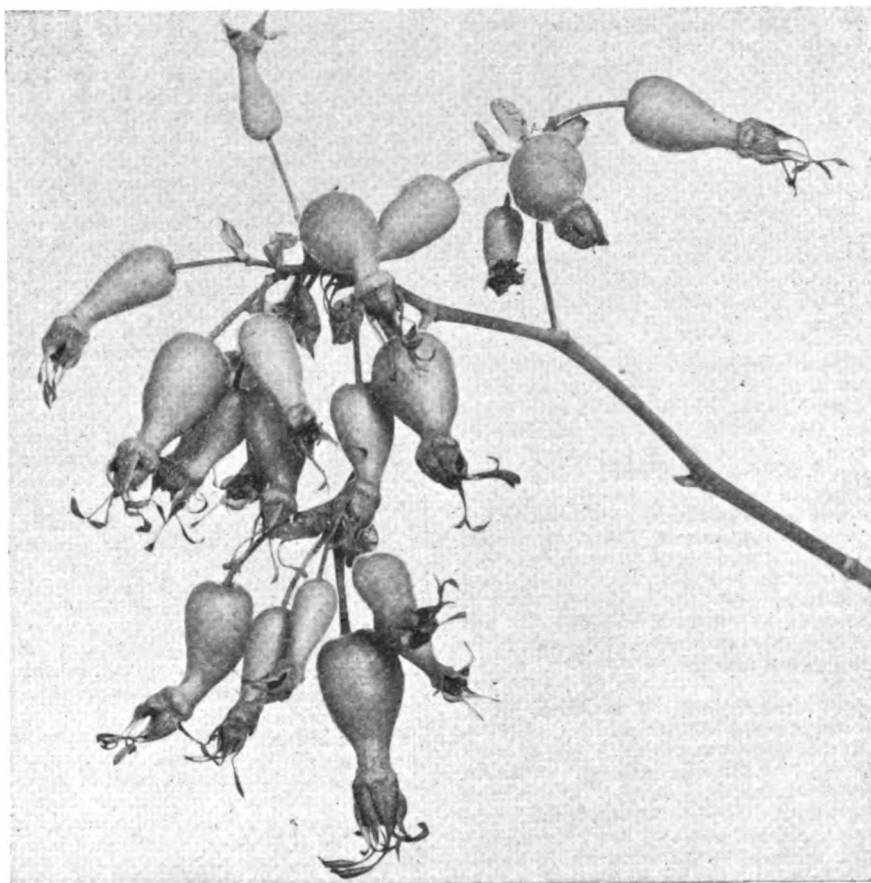


FIG. 173.—FRUITS OF ROSA DAVIDII.

cipally employed for the propagation and preservation of bedding-out stock, of which, as was stated last week, a large supply is required. The forcing garden is detached from all others, and is situated a few hundred yards to the north of the mansion. A considerable space of ground within the walls, independent of that occupied by glass structures, is appropriated to the cultivation of Strawberries, which are planted on broad beds, raised nearly four feet above the level of the garden—a method which increases the available space, and causes an earlier and equally abundant production of fruit. The range of forcing houses includes three large Vineries and two Peach houses. The Vines are planted within the houses and grown on the rod and spur system; from these Vineries a regular supply of Grapes is obtained from May until February of the following year. The sorts are Black Hamburgh and Muscat of Alexandria, with a few rods of West's St. Peter's and Muscadine. Another instance is

ROSE GARDEN.

ROSA DAVIDII.

This species is a native of the mountains of Western Szechuan, where it was collected long ago by l'Abbé David, and later by Mr. E. H. Wilson. It is a bush growing from about one yard to five yards or so high, and bearing pink flowers which are followed by deep orange-red, almost scarlet fruits. The latter have been produced in such great abundance this season on plants at Kew as to render the specimens conspicuously attractive, especially during gleams of sunshine. The illustration (Fig. 173), shows the form of these fruits and indicates the freedom with which the plant produces them. *Rosa Moyesii* is a fine garden plant for its fruits alone, but it would seem to have a rival in *R. Davidii* in this respect, for the latter provides a richer winter colour effect than the former.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Sobralia.—The present is a favourable time for re-potting any very pot-bound specimens of this species. Many plants will be making large roots, and in order to obtain strong flowering growths they should be afforded a somewhat rich, retentive compost that may consist of three parts of its bulk of good fibrous loam, with the dusty particles shaken out, and the other part of *Osmunda*-fibre cut into short portions, with sufficient crushed crocks added to render the whole porous. The pots should contain drainage material to about one-quarter of their depth. Pot moderately firmly. Grow the plants in a light, moist position in a house having an intermediate temperature. It is too soon to remove this year's flowering growths, but so soon as the leaves on those stems begin to change colour, cut them down to the surface roots. Afterwards tie the young shoots clear of each other in order that light and air may pass freely between them. Specimens that have become bare in their centres may be divided, and the portions potted singly in smaller pots or be placed together in larger receptacles. After root disturbance afford the roots water with extra care, and when the plants are well-established see that the soil never becomes dry.

Epidendrum vitellinum.—The autumn-flowering variety of this species is always an attractive subject and well worthy of a place in any Orchid collection. Its erect scapes of cinnabar-red flowers give a very bright and pleasing effect during the dull months of winter. This plant is very easy to cultivate if grown in a light position in a house having a cool intermediate temperature. When growing freely it should be afforded liberal supplies of water at the roots until after the flower-spikes are removed, and the pseudo-bulbs are fully matured, when it should be given a period of rest, affording just sufficient moisture to keep the pseudo-bulbs rigid and the roots healthy.

Coelogyne cristata and its varieties.—These Orchids will now be completing their growths, and from this time onwards the supply of water at their roots should be reduced gradually, or the flower spikes may decay. They should never be allowed to become quite dry, but kept just sufficiently moist to preserve the pseudo-bulbs in a plump condition. The plants should now be afforded all the light and air possible, and grown in a cool intermediate temperature.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Christmas Roses.—If good, clean flowers for decorative purposes are expected from these plants at the end of the year it will be necessary to give them some protection. It is not a matter of hardiness, but the fact that if left unprotected the flowers usually become discoloured through inclement weather. Cloches or small hand lights are suitable for covering clumps of moderate size, the latter being preferable, as they facilitate free ventilation in mild weather. If desirable, a few plants may be lifted and placed on a border in a cool house.

Anemones.—Successional batches of the bulbous Anemones may be planted when soil conditions are favourable. These bright and free-flowering plants do well on light soils, but it is important that the sites prepared for them should be thoroughly consolidated before planting; they cannot thrive in a loose

soil, and this is a frequent cause of failure. Bulbs planted at the present time will yield flowers late in the spring in succession to those planted in September, and the season of flowering may be lengthened further by planting again in February or March. The tubers being small, should not be buried too deeply, about four inches being ample, even on light soils, while in land of heavy texture, two inches is sufficient. If very severe weather follows planting a mulch of fine leaf-mould is a valuable protecting agent.

Gladioli.—Corms of the early-flowering section of *Gladiolus* may also be planted now, but if the soil is heavy it should be partially changed by removing a portion and adding plenty of decayed vegetable refuse and gritty material to make a friable compost. These bulbs should be planted somewhat deeply and be given a protective covering of dry, littery material in severe weather.

Border Chrysanthemums.—Although these plants are perfectly hardy and may be left in the open ground during the winter if desired, where collections are grown for bedding and other decorative purposes, it is wise to lift a few clumps of each variety to carry the stocks through the winter. They should be placed in boxes with sufficient soil to cover them and stood in a cold frame where they should be given just sufficient water to keep the stems plump. Give the frame ample ventilation whenever the weather is favourable. These plants will provide good supplies of material for propagating in the early months of the year, and may then be divided and planted in the borders if necessary.

Cuttings in Frames.—During periods of frosty weather, when the covering of frames becomes necessary, much care is called for in the management of the various stocks of plants for next year's bedding which are carried through the winter in cold frames. During the next few weeks plant life will be at its lowest vitality and any lack of attention may cause larger losses than when vitality is high, hence care must be exercised that cuttings of *Antirrhinums*, *Pentstemons*, *Violas* and similar plants do not suffer from damping. Comparative dryness and ample ventilation are the essential factors for the successful wintering of these plants, and it is an important matter of routine to remove the covers as early as practicable and afford all the ventilation possible for as many hours as the condition of the weather permits.

Falling Leaves.—To have good stores of fallen leaves should be the aim of every gardener at this season, but the collection of them should be done judiciously. It is not wise to rob the woodland of this, its annual manuring, and in the shrubbery, generally, leaves should be left to enrich the soil for its occupants. On drives, paths, lawns, beds and borders, etc., where high cultivation is practised, they must, of necessity, be gathered and removed, and these should be stored for hot-beds or for use next year to mix with the supply of refuse during the season of active growth for building up the manure heaps.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Chrysanthemums.—For the production of large *Chrysanthemum* blooms for exhibition the importance of having the best possible stocks of cuttings to select from, at the time of propagation, can hardly be over-rated, and to ensure this it is advisable at the present time to bestow some extra attention on the old stools from which the cuttings will be forthcoming. Most exhibitors of large blooms commence propagating by the second week in December. Certain varieties produce suckers or so-called root cuttings very freely during the flowering season, and unless these are rigorously thinned the whole of them will become weakened and attenuated. As a rule, most of the mid-season

flowering varieties may be cut down a few weeks before the cuttings are required. Do not shorten the stems lower than two feet from the pots, as in the case of varieties which are shy in producing suckers it may be necessary to use what are termed stem cuttings if others fail to appear. After the plants have been cut down place the pots in a light position in a cold vinery, Peach-house or cool greenhouse. Any varieties which are backward may be top-dressed with a little fresh soil, and be placed in a position to themselves where they can be lightly syringed and the atmosphere kept a little closer to promote growth. Keep the points of the growths free from green and black aphids by fumigating the house, and to ensure their freedom from these pests at the time of inserting the cuttings it will be wise to fumigate the house containing the stools a few days in advance of the propagating operations.

Bulbs for Forcing.—Early-flowering *Narcissi*, *Roman Hyacinths* and other bulbs which were potted during early September and afterwards plunged in fibre, will from now require weekly examination, and those which have made sufficient growth should be taken out of the plunging material. They should, however, occupy correspondingly cool quarters for a week or two after their removal, and the blanched growth should be shaded from strong light for a week or so. Those which have well-filled their pots with roots and have become accustomed to full exposure to light may be introduced to gentle warmth in batches as desired.

The Conservatory and Show Houses.—The attractiveness and the pleasurable enjoyment of visitors to the conservatory and show house is greatly enhanced when efforts are made to keep them sweet and clean, and at no other time of the year is it more necessary to observe this rule than the present. Decaying foliage not only detracts from the beauty of the plants themselves but also tends to shorten the life of the flowers they are bearing. Therefore, all decaying foliage and stale flowers should be removed daily, the minimum amount of moisture necessary should be used in the houses, and when it is necessary to scrub or wash the latter, the floors should be mopped as dry as possible after these operations.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAK,
Wormley Bury, Broxbourne, Herts.

Early Peach House.—The last week in November is a suitable time to start the earliest Peach and Nectarine trees into growth. If the houses have been cleansed as advised in an earlier calendar, the trees pruned, washed and trained, the surface soil of the border removed, and fresh, sweet compost substituted, commence forcing by closing the house at night for the first few days, using no fire heat. If the weather is bright close the house about 1 o'clock, and gently spray the trees with tepid soft water. Keep the paths damp at all times, and maintain a temperature of 45° at night and 50° by day. Admit air very carefully through the top ventilators when the outside conditions permit.

Pot Trees of Peaches and Nectarines.—Where the earliest supplies of fruit are required from pot trees, preparations should be made for bringing those selected for earliest forcing under glass. It will be found that trees forced year after year will respond to treatment much quicker than those brought in the first season, and will ripen their fruits quite ten days before those in permanent borders. Before bringing the trees indoors, see that the surface on which they are to stand is perfectly level, and use fresh surfacing material of either fine gravel or shingle. Place two bricks edgewise on which to stand the pots to ensure the water draining away quickly. Spray the trees twice daily during bright days, and maintain an even temperature of 45° to 50° by day, and use only sufficient fire-heat to keep the house at the temperature stated. Hard forcing should not

be attempted, otherwise failure will follow. It is a good plan to fumigate the trees after they have been in the house for about a week. See that the houses are a little drier and no moisture on the trees when the fumigating is done.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate, Crawley, Sussex.

Dressing Wounds on Fruit Trees.—In pruning fruit trees keep a careful watch for cankered places, splits in the bark and other crevices on the stems, and, after scraping the surface clean, dress the part with gas tar and clay in equal proportions mixed with one-third its bulk of soluble paraffin. The mixture should be of the consistency of thick paint, and if too thick for working, add a little soft soapy water. The specific should be worked in the cankered places and crevices with a stiff brush. It will destroy many lurking insects and their eggs, and also prevent insects from hiding in these places in the early summer. In addition, the dressing will assist in keeping canker in check.

Mussel Scale.—The best remedy for this pest is to syringe the trees late in the afternoons with warm water, when there is a frost that is likely to continue all night. Spraying with an insecticide is of little avail against this insect but it is killed by a coating of ice; warm water is used because it is more comfortable to apply with the syringe than ice cold water, and it soon gets cold and freezes.

Planting Small Bush Fruits.—New plantations of bush fruits may be made if the ground has been well-cultivated in advance. The soil should be trenched two spits deep or more if plenty of decayed manure, leaf-mould and lime can be dug in the bottom spit. Where this has been done previously the frosts have made the ground in fine condition for planting. The distance apart of the bushes should be regulated by the ground that can be spared; as a rule, five feet apart each way is a suitable distance for bushes when they are established, but to make the most of the ground for a couple of years, they may be set two feet six inches asunder, and the supernumeraries removed before they crowd the others. Potatoes may be planted between the rows for a few years, and this crop will help to bring the ground into a good tilth. In planting the bushes see that the soil is well-worked in about the roots and made very firm. A top-dressing of well-rotted manure or half-decayed leaves put around the bushes will protect them from severe frosts.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Salads.—Although salads are not in such demand in most establishments, at this season of the year as in spring and summer, yet many growers have to produce a continuous supply of practically all kinds of salads through the winter, and with attention and forethought this may easily be done. Lettuces will require constant attention to keep them in a healthy condition. Examine the plants growing in cold frames regularly for detecting any foliage that may show signs of damping off, and stir the soil regularly. Endive is very subject to damping owing to the large quantity of leaves the plants usually make, especially the Batavian variety. These plants may be blanched ready for use if kept dark for some time in the frames where they are growing, but it is best to introduce a few plants each week into the Mushroom house. The best results with Mustard and Cress are obtained by sowing the seeds in boxes and germinating them in heat as frequently as necessary and according to the quantities required. The Cress seeds should be sown two days before the Mustard seeds to have both plants ready for cutting at the same time. A few roots of Chicory

taken from the store bed at intervals and placed in boxes or pots filled with leaves or fine soil may be forced under the stage in a greenhouse, inverting pots of the same size over those in which the plants are grown. Corn Salad may be obtained from outside beds in practically any weather right through the winter, and is often useful as a substitute for other green salads when they are scarce. Beets will be available in the clamp as required, and for salad purposes at this season of the year young roots of the globe type raised from seeds sown in July will be found to be best. Keep a few heads of Celery, lifted in advance, in some secure place so that supplies will be available when the ground is frozen hard. For giving flavour to mixed salads use young Onions that were sown for the purpose in August. Ripe Tomatoes will be available from the top trusses of the early-sown summer crop. Cucumbers from plants of the late summer sowing will still be producing fruits suitable for salad requirements.



FIG. 174.—MECONOPSIS CONCIINNA.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Adiantum pedatum.—This hardy North American Fern thrives best when planted in a fairly moist situation in partial shade. The soil should consist of a mixture of peat, loam, leaf-mould, and coarse sand, in about equal parts. After planting, a few stones of suitable sizes may be laid around the crown, for these will assist in establishing this Fern. The old foliage should be retained, for it will settle over the crowns and form a perfect natural winter protection. This covering should be removed carefully about mid-April, when it is noticed the young fronds show signs of growth. In its dormant state low temperatures and frosts of long duration have no ill-effect upon A. pedatum, its critical period with us being when the young fronds appear, and these should be protected from cold by setting Spruce branches, cut into suitable lengths, about the plant. A. pedatum will spread if planted in a suitable place. The best time to plant is in spring, before growth commences.

Rock Garden.—Constant attention should be given the plants in the rockery. Remove fallen tree leaves from the alpine for if these are allowed to remain, especially if deposited

to any great depth, they will commence to ferment and cause damping in the plants. Where planting was done in the autumn, frequent examination of the new plants should be made to see that they be not loosened by the action of frost, and, if they are, they should be made firm again.

Violets in Frames.—During this month and next, damping of the foliage of Violets in frame is likely to occur. On suitable days remove the saashes, and pick off all decaying leaves. Stir the soil between the plants with a hand-fork each time the frame is examined. Cover the frame with protective material each night in case of frost, but remove the covering at the earliest opportunity each morning. Admit air freely to the plants during the day when the weather permits.

ALPINE GARDEN.

MECONOPSIS CONCIINNA.

THIS is a charming little Meconopsis (Fig. 174), from Western China, closely allied to the Himalayan *M. bella*. It was found by Forrest in Yunnan at an altitude of 13,000 to 14,000 feet, on the mountains of the Yang-tse bend in 1914. In his field notes he describes it as a pretty little alpine species with scapes five inches to six inches long, each bearing single, deep purplish-blue flowers. The plant was discovered in stony pastures, and on the ledges of limestone cliffs. Like most other species of this genus, it is evidently a biennial, with a tuft of lobed, or pinnatifid leaves, not so much divided as in *M. bella*. So far as I know, little success has attended its cultivation in this country, and, like its Himalayan relative, it is evidently one of those difficult plants to manage, except under cool northern conditions. *W. Irving.*

HARDY FLOWER BORDER.

KNIPHOFIA NELSONII.

I HAVE read Mr. Ralph E. Arnold's article on the Kniphofia genus (p. 386), with great interest. However, there is no mention therein of *K. Nelsonii*, to my mind, one of the most charming of them all. It was introduced to cultivation from the Orange River Colony many years ago, but is still rarely seen in gardens and still more rarely supplied true to name by nurserymen. It is one of the slender growing species with grassy foliage from which a large number of flower stems, from eighteen inches to two feet in height, arise about the middle of September. The flowers seldom open before the first week in October, when their brilliant orange-scarlet colouring is particularly welcome. The flower heads are very slender and graceful and the whole plant carries with it a subtle air of distinction which some of the garden-raised hybrids lack. It appears to be quite hardy, at any rate in the south. When grown in well-drained, rich soil, it increases fairly rapidly and should be divided every three or four years. The one drawback to its increased popularity is the attraction its flowering stems have for slugs; it is advisable to dust the crowns of the plants with a reliable slugicide (alum is as good as anything) now and then from the end of August onwards, and thus render the plants distasteful to the pests.

Kniphofia multiflora, a tall, cream-coloured species from Natal, is flowering well here at present and the flowers have withstood 7° of frost without injury. In general effect it resembles an *Eremurus*, and is a distinct and valuable plant for November flowering. The tallest stem is at least seven feet high. *N. G. Hadden, West Porlock, Somerset.*

SALVIA VERBASCIFOLIA.

A SAGE which came here under another name has recently been identified as *Salvia verbascifolia*, a native of Spain. Though introduced a

hundred years ago, this interesting species is apparently now quite uncommon, but it is a subject of no small garden value for, in addition to being handsome in flower and foliage, it is quite hardy, very adaptable as to soil and situation and vigorous enough for the wild garden or woodland.

S. verbascifolia is an herbaceous species, making a bold clump of foliage, the oval leaves, fully one foot in length and half as broad, being a dull, olive green above, deeply netted and covered on their underparts with a dense creamy-white felt. In early summer the flower stalks, rising to the height of some eighteen inches, and generally two-branched, bear pendant white blossoms, very downy without and within, and slightly flecked at the throat with purple.

The flowering season extends through the summer. Seeds ripens freely, and afford a ready means of increase. Though this *Salvia* will succeed as stated above, in almost any light loam, it repays for generous treatment. Our largest and best plants are growing in a good, somewhat cool, kitchen garden soil. It is a true perennial. A. T. J.

A FEW HARDY FLOWERS FOR CUTTING.

THERE are at least two totally distinct stand-points from which to judge the merits of a flower for cutting purposes. The commercial grower, market salesman, and the artistic florist have their very decided views regarding the worth or the worthlessness of a flower, and it is a point that brooks no argument that very many of the flowers that are catalogued as "good for cutting" would be allowed to occupy no space on any Covent Garden stand. Nevertheless, there are many flowers which would be quite unsuited to market or shop trade, which may undoubtedly be described as good for cutting when it is understood that the plants are to be grown in the home garden, and the flowers are to be cut for use in the home with no necessity for packing, travelling, and exposure for a day or more in either market or shop.

Such, it may be assumed, is the purpose for which many readers of *The Gardeners' Chronicle* are called upon to produce flowers, and whilst it is very desirable that, so far as may be reasonably possible, the flowers thus grown should possess distinctive character, and embrace much variety that cannot well be secured through ordinary commercial channels, it is equally essential that space, labour, and faith, if I may use that word to indicate reliance upon a flower to serve its purpose, shall not be wasted upon things which will, after all, prove unsuccessful, or at best reach no higher plane than mediocrity.

One sees the term "good for cutting" attached to descriptions of flowers that will never serve a useful purpose in a household where refinement of taste possesses any meaning, and it must not be an accepted notion that because the flowers of a herbaceous plant make quite a useful vase in a collection staged at a flower show, it should unhesitatingly be recommended as a flower for use in the house.

Rudbeckias, for instance, are frequently recommended, but apart from *R. speciosa* there is scarcely one in the whole family which produces a pleasing effect six hours after cutting. Helianthus are decorative and possess good lasting powers, but in a warm room the odour of their stems and foliage becomes nauseous, and in the space of twelve hours the water they stand in will be malodorous. The drawback to *Phloxes*, *Verbascums*, and various other quite pretty flowers is that their "pips," as the corollas are termed, drop so abundantly that they create too much untidiness. Some flowers will persist in drooping their heads, presenting at once an unhappy, mournful appearance, and others again, seem to lose all their lustre and sheen immediately they come within four walls.

My purpose, however, is not to dwell upon unsuitable flowers but to direct attention to a few particularly serviceable hardy plants which are worthy of special recommendation to those who have occasion to maintain a supply of cut flowers for household use.

There is no occasion to inform readers of *The Gardeners' Chronicle* of the merits of *Pyrethrums*, *Crocus*, and the long-established

favourites which have been everywhere grown and regularly utilized for decorative work, but greatly as we may appreciate these "mainstay" subjects, as they may well be termed, there is undoubted advantage in extending the range of material so long as the extension is in a direction that will facilitate the execution of original and pleasing schemes of decoration.

Clematis recta, non-climbing, herbaceous, and prolific is admirably adapted for furnishing large bowls, especially in situations where a subdued light prevails, for its charming "liness" combined with its cream colour, fits it for the somewhat darkened corners of large rooms or halls where it seems to shed light. The flowers last long in water and are pleasantly fragrant. A variety named *grandiflora* is much superior to the type and grows with greater freedom. It is a plant that should be given ample space for development, and when once established is best left undisturbed.

Armeria "Pee's Ruby" possesses distinct claims to recognition as a flower for cutting. Its colour is effective; the cerise red being the brighter by reason of a glistening sheen that overlays the petals. The globular heads have a certain formality which is relieved from stiffness by their poise, whilst the stems are long, slender and very wiry. Another important point is that whilst the flowers are cut so soon as they are sufficiently developed the plants continue to throw up fresh blooms for a very long period, and their lasting powers, in water, are exceptional. Messrs. Perry's new *Armeria plantaginea gigantea*, of a lighter pink, bids fair to rival the preceding variety in decorative utility.

The varieties of *Lythrum Salicaria* are not particularly pleasing indoors, for even though some of the best are freed from the magenta tints which are dull when robbed of top light, even the best of them have a habit of curling over the tips of their spikes, giving the flowers an appearance of fading. *L. virgatum* is infinitely to be preferred for cut flower decorations, its lightness and slender build making it a really elegant flower. Forms of this *Lythrum* are available which are many shades brighter than older types, and quite free from puce or purplish tones.

A flower that demands no skill in arrangement and which furnishes its own garnishing in the form of most exquisite foliage is *Gillenia trifoliata*. Its small, shimmering-white blossoms, trembling on the slenderest of footstalks, attain the very acme of elegance, and the whiteness of the petals is enhanced by the mahogany red tints of the calyces. Smaller still in individual blossoms, and of gossamer lightness are the loosely-formed umbels of *Asperula hexaphylla*, the whorls of narrow, pointed leaves at regular intervals along the thin but tough stems completing an ideal elegance which makes *Gypsophila paniculata* appear almost plebeian by comparison. A point strongly in favour of *Asperula hexaphylla* is that it may be planted under the shade of overhanging shrubs, and if kept well cut will carry on its blossoming from the dawn of summer until autumn.

Eryngiums of several sorts are prized because they may be dried for winter use, but with all due regard for *E. alpinum*, *E. giganteum*, and *E. Oliverianum*, the greater decorative merit belongs to the smaller but more profuse and highly artistic *E. tripartitum*, with all its parts arranged with regular precision in multiples of three, yet without the slightest suspicion of stiffness. *Eryngium Wrightii*, which may be described as a vastly improved *E. planum*, is very delightful, its blue shade being the purest and richest of the family, and *E. corniculatum* with a slender, gracefully curved horn protruding from the apex of every cone is extremely decorative.

Of Composites, a host of good plants might be named, but one which is undeservedly slighted is *Anthemis tinctoria*, especially in its two varieties, *Kelwayi* (bright yellow) and *E. C. Buxton* (sulphur). Stems cut from the base of vigorous, young plants will each provide a self-arranged bouquet which may be set up to pleasing effect. It is quite customary

for these flowers to do duty in my room for ten days or a fortnight, frequent changes of water being their one requirement.

Of *Heleniums* some are very good, and some hopelessly indifferent. *H. pumilum magnificum* in its best form, thinned, to give rigidity and straightness to the stems, is one of the finest of all yellow flowers.

H. cupreum Crims on Beauty is the one red *Helenium* that should never be omitted from collections of herbaceous plants, and of the dark-centred yellows my unhesitating choice would be *Madame Canivet*, recently distributed from Mr. William Sydenham's nurseries. Its yellow is a shade apart from the rest of the tribe, and with the rich brown of the hemispherical discs it strikes a combination unusually pleasing.

Nepeta Mussinii is as charming when arranged in a bowl as when waving in a gentle breeze in the garden, and its capacity for blooming is well-nigh limitless. The spikes are always capable of more than a week's duty, and the soft shade is often more acceptable than vivid colours. For the same reason there is much to be said for *Stachys lanata* as a cut flower, and many good uses may be found for the fine spikes of *Lavender Grappenhall* variety. For small vases it would be difficult to find a more charming flower than *Origanum hybridum*, and although it is most frequently seen in groups of stove and greenhouse plants at Shrewsbury, York, and Wolverhampton, I have grown it and wintered it successfully on rock gardens northward as well as in the south. A quarter of a century ago a variety was in cultivation named *Origanum Tournafortii*. It was larger and brighter than any other form I have ever seen, but I have searched in vain for it these last ten years, and should be glad, indeed, to find it again.

Poterium obtusatum is wonderful in its elegance; it should be grown in a position near water, but with free drainage, and cut persistently; the grasses, even, are not more graceful.

When real brightness is required, *Pentstemon barbatus*, in its season, which is fairly long, will provide coral scarlet with a gloss which intensifies its brightness. Seedling stocks vary considerably in colour, but with a little re-selection a glorious array of brilliant flower spikes may be had. Another *Pentstemon* that should be prized for cutting is *P. isophyllus*, a plant of shrubby habit, somewhat similar in general form of flower to *P. barbatus*, but shorter in the spike. The flowers are produced in abundance and over a long period of summer and autumn; they are of great artistic merit. It has been alleged that *P. isophyllus* is not hardy, but I have seen it in the best of form in the midlands, and have only found it necessary to plant it near a sheltering background which serves the dual purpose of affording protection and showing off the flowers to advantage.

Still another very beautiful flower, and one that provides most delightful material for small vases in late summer and autumn is *Zauschneria californica*. The flowers have the appearance of being very fragile, but they last long in water. A high position on a well-drained rockery suits this plant, but it should be allowed room to spread.

Artemisia lactiflora, with plumes of milk-white flowers, is very useful in late autumn, and makes a good companion for the darker-coloured *Michaelmas Daisies*.

Thalictrum dipterocarpum is, of course, incomparably beautiful and elegant, and its white variety is also a charming vase flower, but there is a much older *Thalictrum*, the value of which seems strangely to have been ignored, viz., *T. petaloideum*. Milk-white, and of good size, the flowers are borne in loose heads over elegant, fern-like foliage.

Of the *Astilbes*, the *Heucheras*, *Alstroemerias*, and such general favourites as *Scabiosa caucasica*, there is little need to write, but a brief recommendation may well be accorded the modern varieties of *Lobelia syphilitica*, some of the best hybrid *Sidalceas*, *Dracopha pulchrum grandiflorum*, and that inestimable perennial *Pea*, *Lathyrus latifolius* "White Pearl." A. J. Macself.

ORCHID NOTES AND GLEANINGS.

SOPHRO-LAELIO-CATTELEYA RADIANS AND S.-L.-C. ADONIS.

FOLLOWING their pedigree strain in Sophro-Laelio-Cattleya Marathon, flowered by them in 1903, with a view to establishing a new type equal in size to the best Cattleyas, but with the bright and varied colours of the Sophronitis crosses, Messrs. Charlesworth and Co., Ltd., Haywards Heath, send flowers of their two latest novelties, which mark a great stride towards the object aimed at, and are far ahead of previous records. They have named them S.-L.-C. Radians and S.-L.-C. Adonis.

Sophro-Laelio-Cattleya Radians was raised between S.-L.-C. Isabella (C. Fabia x S.-L.-C. Marathon) and Cattleya Princess Royal (Fabia x Hardyana).

The flower is equal in size and shape to a good C. labiata. The sepals and petals are rosy-mauve with a gold shade, the petals having also a reddish-mauve feather at the tips. The well-formed lip is ruby-crimson with thin gold lines from the base to the centre.

The richly coloured hybrid named Sophro-Laelio-Cattleya Adonis was raised by crossing Sophro-Laelio-Cattleya Anzac (L.-C. Dominiana x S.-L.-C. Marathon) and C. Warneri Ardenholme variety. The two-flowered inflorescence of this hybrid is Cattleya-like in form, the sepals and petals bright reddish-violet, and the broad lip purplish-crimson with gold lines at the base.

ODONTOGLOSSUM LUCRETIA

THIS recently-raised hybrid Odonoglossum (amabile x St. James), one of the largest and most richly-coloured, is also sent by Messrs. Charlesworth and Co. The flower is over four inches across, the petals being one-and-a-half inch wide. The colour is bright Tyrian purple with effective, irregular, white lines and white margin to the lip, flaked with purple. J. O'B.

CYPRIPEDIUM ROSALIND.

THIS fine Cypripedium (Fig. 175) is the result of crossing C. Niobe with C. Reginald Young. The white ground of the dorsal sepal contrasts finely with the blackish-purple lines as well as the green base. The petals are green and brown and the neat labellum is burnished brown. This hybrid was exhibited at Vincent Square on Nov. 17 by Messrs.

Sanders, St. Albans, and gained an Award of Merit, but as a result of a clerical error the name was given wrongly as C. Roslyn on p. 417; C. Rosalind is the correct title.

NOTES FROM A WELSH GARDEN.

LEPTODERMIS pilosa, referred to by Mr. J. W. Besant in his "Notes from Glasnevin" (p. 389), has been growing here, against a west wall, for some four or five years. This autumn it flowered exceptionally well, the ends of its elegant growths carrying a bountiful crop of the little, tubular, bluish-white blossoms. Though usually severely cut back by the first November frost, L. pilosa appears to be hardy enough for out-door culture here without any protection save a wall. As a rule, the whole of the summer growths (about three feet in height) are more or less killed, but the plant sends up in spring, vigorous, fresh shoots like a Fuchsia.

The indifference to frost displayed by Gentiana sino-ornata, and to a lesser extent by G. Farreri, is remarkable. A thermometer placed on a bed of the former registered 18° and 20° of frost on several successive nights. Yet so little effect has this had upon the plants that they were bearing each day, at noon, dozens of perfect blooms. G. Farreri would doubtless have been equally resistant, but most of the plants were just about past their flowering stage when the frost came.

An old and large plantation of Gentiana acaulis did not flower with its customary freedom last spring, and as the bed is now a dense mass of the Gentian, plus a good deal of grass and other weeds and stray plants, we felt that there was nothing for it but the troublesome work of lifting, dividing and replanting; but this has now become quite unnecessary for the Gentians are as full of buds as they could well be. The explanation, it appears to me, is this: during June and July, the plants, which are in poor, stony soil on the top of a steep bank, were subjected to a severe drying. In fact, they were so withered that it was thought they would never recover. But it is manifest that this summer rest is just what suited them, for so soon as the rain came in August and September they began to recover rapidly and form flower buds.

After all, this is much what one might expect, for turf Gentians in their native habitat are often, if not usually, subjected to a thorough drying during the later summer months. In fact, they are frequently mown down along with the hay and this renders them even more exposed to sun-heat and drought than they might otherwise be.

Sollya heterophylla is always one of the first plants to succumb to frost here. Calceolaria violacea, Veronica Hulseana and most of the Cistuses may go unharmed, but the Australian Blue-bell perishes, even if covered over, as soon as the thermometer exceeds 12° to 15°. Cantua buxifolia is another shrub which must be placed in the same category so far as we are concerned. Ceratostigma Griffithii looks as if it had passed beyond the most sanguine hopes of recovery, but C. Willmottianum, with no shelter whatsoever, remains untouched. Grevillea rosmarinifolia, and G. sulphurea are also perfectly hardy with us, and they have been in flower throughout the month of November. Even more remarkable, perhaps, is Lithospermum rosmarinifolium, which has for several weeks been adorned with its beautiful blue flowers. This choice shrub has not suffered, except the loss of a few fully-expanded blooms.

There is no more cheerful object in the woodland at this season than a large patch of Polygala Chamaebuxus, especially an unusually robust form of the variety purpurea. Throughout the autumn and again in spring this pretty alpine shrub is always a mass of colour, Pea-like flowers of rosy-lilac and yellow nestling among the dark green leathery leaves.

In semi-shaded parts of the woodland the bright red berries of Gaultheria procumbens are delightful just now. G. Hookeri, a much larger shrub, still has a few of its bluish-white fruits, but the mice or birds quickly made an end of the "sugar-coated pills" of G. cuneata pyrolaeifolia.

As a fruiting Ericaceous shrub, Vaccinium glauco-album is notable at this season, its clusters of black fruits, with the bluish-white bloom of a Grape, being very effective; indeed, this Himalayan species has many features of merit. It does not rise much above three feet; the rather large, hard, pale green leaves are a vivid starch-white beneath, and this colour also pervades the young wood, and the conspicuous bracts which accompany the racemes of bluish-pink flowers. Though undoubtedly on the tender side, V. glauco-album has never been injured here.

Escallonia montevidensis has been in flower since early October, and if the blossoms of this species are a little disappointing and often too late to be relied upon in open ground shrubs, there is something curiously attractive and distinctive in both the colour and the formation of the foliage. Malvastrum phoeniceum (?) is also still in flower, despite the frost. The deeply-cut leaves, tall, upright, whip-like growths, and little, cup-shaped, mauvy-crimson blossoms of this shrub make a pleasing combination. M. phoeniceum is, moreover, a spring to autumn bloomer, it seems quite reasonably hardy, even with full exposure, nothing is more easily raised from cuttings, it is a rapid grower and, in my experience, amenable to almost any soil or situation.

Some of the Tree Heaths, notably Erica lusitanica and E. Veitchii, are in flower, there being nothing wintry enough in this district at any rate to daunt these reliable winter bloomers, provided, of course, they are not exposed to cutting winds. Few shrubs, however, are more apt to be broken down by snow. As subjects for open spaces on dry, woodland banks, these Heaths, together with E. arborea and E. alpina, would be worth growing; for their foliage even if they never flowered, and the delicate green of the plumose branches is never more attractive than it is in winter. The growers of plants for market have long realised the value of Ericas for winter blooming in pots, and there are no more popular plants for the Christmas trade than Cape Heaths. A. T. Johnson, Ro Wen, Talycafn, N. Wales.

NEW HYBRID ORCHIDS.

(Continued from October 24, p. 328.)

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Olbia	C. Mrs. Pitt x B.-C. Mrs. J. Leemann	Charlesworth & Co.
Cattleya ardentissima	Fabia ignea x Peetersii	Sanders.
Cattleya Eleanor Gray	Marriottiana x Dowiana	G. E. Baldwin, U.S.A.
Cattleya Gilius	Helloior x Hardyana	Baron Schröder.
Cattleya Lavinia	Alcimedea x Warszewiczii	Stuart Low & Co.
Cattleya Monica	Princess x Carmen	Cowan & Co.
Cattleya Paraiso	Dowiana x Helloior	Baron Schröder.
Cattleya St. Andre	Golden King x Fabia alba	Sanders.
Laelio-Cattleya Adrastus	C. Mossiae Reineckiana x L.-C. Lucille	Charlesworth & Co.
Laelio-Cattleya Ashdown	L.-C. Tunis x L.-C. Mrs. Evelyn Norrie	Stuart Low & Co.
Laelio-Cattleya Beryl	L.-C. Smilax x L.-C. Golden Oriole	Charlesworth & Co.
Laelio-Cattleya Cantab.	C. Ballantineana x L.-C. St. Gothard	Stuart Low & Co.
Laelio-Cattleya Herall	L.-C. Mossemilliana x C. Dowiana	Stuart Low & Co.
Laelio-Cattleya Illustrious	L.-C. Lustra x C. Mendellii ardens	Stuart Low & Co.
Laelio-Cattleya Junia	C. Prince John x L.-C. Myrrha	Stuart Low & Co.
Laelio-Cattleya Locarno	L.-C. Soulangue x C. Tityus	Stuart Low & Co.
Laelio-Cattleya Mamaroneckensis	C. Warszewiczii x L.-C. C. G. Roebling	G. E. Baldwin
Laelio-Cattleya Memoria Pantia Ralli	C. Lord Rothschild x L.-C. Britannia	C. J. Lucas, Esq.
Laelio-Cattleya Primera	L.-C. Wellsiana x C. Hardyana	Stuart Low & Co.
Laelio-Cattleya Rosemary	Iridescent x L.-C. Luminosa aurea	Sir H. Leon.
Laelio-Cattleya Sunshine	L.-C. Sunray x L.-C. Roumania	Cowan & Co.
Odonoglossum Capella	Oda. Hilfa x Oda. Mrs. F. M. Ogilvie	Charlesworth & Co.
Odonoglossum Clusia	Odm. Gorizia x Oda. Cardinal	Charlesworth & Co.
Odonoglossum Gelsia	Oda. Karoa x Oda. Cardinal	Charlesworth & Co.
Odonoglossum Icaris	Odm. crispum Lyoth x Oda. Nena	Charlesworth & Co.
Odonoglossum Yvonne	Oda. Cooksoniae x Odm. Gorizia	Charlesworth & Co.
Odonoglossum Ascania	Antinous x Georgius Rex	Charlesworth & Co.
Odonoglossum Mercutio	eximium x crispum Solon	Charlesworth & Co.
Potluna La Paz	Sophro-Cattleya Faboris x B.-L.-C. The Baroness	Baron Schröder.
Sophro-Cattleya Flammea	S.-C. Doris x C. Tityus	Mrs. P. Smith
Sophro-Laelio-Cattleya Adonis	S.-L.-C. Anzac x C. Warneri	Charlesworth & Co.
Sophro-Laelio-Cattleya Lucifer	L.-C. Majestic x S.-L.-C. Anzac	McBean.
Sophro-Laelio-Cattleya Radians	S.-L.-C. Isabella x C. Princess Royal	Charlesworth & Co.
Sophro-Laelio-Cattleya Rhoda	S. grandiflora x L.-C. Episcasta	Cowan & Co.

NOTES FROM EDINBURGH.

In addition to those trees and shrubs valuable for autumn effect mentioned in *The Gardeners' Chronicle* October 24, p. 332, *Sorbus Sargentiana* deserves to be mentioned, as the foliage assumes warm tones of dark red, and it is an outstanding garden feature towards the end of October. *Cotoneasters* have fruited well, and so have the common Hawthorn and the Dog Rose (*Rosa canina*). The Barberries are rather disappointing although *B. virescens* has produced a goodly quantity of its small, but rather inconspicuous dark red fruits. The Snowberries have been fairly good.

After the glory and beauty of autumn leaves and fruits have departed there yet remains another source of interest among these plants. There are now in cultivation a large number of shrubs and trees whose stems and twigs are brightly coloured, and these help considerably in providing colour in the garden at a time when flowers are scarce. Moreover, the delicate tracery of branch and twig seen against an autumn or winter sunset is one of the most beautiful sights that one could wish for. This subject has been dealt with by far abler pens than mine, so I propose to draw attention to the supreme value of Birches in ornamental plantings, for they are graceful trees at all times of the year, more especially the weeping forms. Nevertheless, it must be admitted that a scene composed chiefly of weeping Birches is a rather depressing sight on a wet day. Birches are admirable as specimen trees, and in the Edinburgh Botanic Garden there is a specimen of *Betula alba pendula* referred to by Darwin (*The Variations of Animals and Plants Under Domestication*, vol. ii, p. 18) as "a magnificent weeping Birch." An illustration of this remarkably fine tree appears as a frontispiece to *The Book of the Winter Garden*, by D. S. Fish. The bark of the Birch is not the least of its attractions in winter, and is an especially notable feature in *Betula papyrifera*.

The Willows provide a number of species with coloured wands of great value in a garden. The golden stems of *Salix vitellina*, and the glaucous or greyish stems of *S. daphnoides*, are well-known. Red is the distinguishing colour of the slender stems of the Dogwoods, of which *Cornus sanguinea*, *C. alba Spaethii*, and *C. stolonifera* are the best. *Berberis virescens* has already been noted for its fruit, but its red stems are its chief attraction, and the plant well deserves cultivation for this feature alone. Probably the most remarkable deciduous tree of value for its coloured stems is *Acer pennsylvanicum erythrocladum*. This is a very fine variety, the old bark being streaked with white, while the young shoots are of a brilliant red, with just a suggestion of yellow colouring on the leaf scars of the youngest shoots.

Leycesteria formosa is well-known for the ornamental character of its green stems, as also are the various species of Brooms and the Gorse (*Ulex europaeus*). The stems are also one of the attractive features of the Jew's Mallow (*Kerria japonica*). *Rubus biflorus* and related species form a source from which curious and interesting effects may be obtained during the winter months. This group of plants is characterised by the white-washed appearance of the stems, which show up to advantage in the winter.

Some mention of autumn flowers is desirable and of these there are some interesting species. The Gentians at Edinburgh attracted many folk during early October, when the exquisite *G. Farreri* was seen to advantage. Some interest centred also in the flowering of a large patch of *G. sino-ornata* in the Rose garden. Another patch in the sheltered bay afforded by the Rhododendron and Rock Houses also flowered, but not so freely as the plants in the Rose garden. *G. Lawrenciana* flowered in the rock garden. In a cold frame, there is quite a good clump of *Nerine Bowdenii*, which has flowered very well. The lights of these frames are removed entirely during late spring and throughout the summer, and only replaced in the autumn when frost threatens. The

plants cannot, therefore, be said to be "coddled," and they thrive quite well. The white-flowered *N. candida* is in flower in the Rock House.

Under the rather cumbersome title of *Iris alata caerulea Orsinii* there is flowering in the Rock House an interesting little Iris of the Juno group. Its flowers are of a pale blue colour, and the plant is only a few inches high. In the Corridor, *Macleania punctata* is in flower. This is an evergreen climbing plant with fine glossy-green leaves the under surfaces of which look as if they had been gently pricked with a pin. This characteristic, punctured appearance is responsible for the specific name of the plant. The flowers are axillary and in clusters; they are red with white tips. This is a valuable flowering plant belonging to the *Vacciniaceae* and was introduced into cultivation by William

TREES AND SHRUBS.

ROMNEYA COULTERI.

If nurserymen find it more profitable to propagate the Californian Bush Poppy by root-cuttings or seeds, the private grower has at hand a much simpler and quicker method than either of the above, I refer to making use of suckers for the purpose of increase. As is well-known, *Romneya Coulteri* forms suckers freely, especially when old, shoots often appearing above ground ten feet from the parent clump. As a general rule, we always pull these out, but a few of the best are reserved for the increase of stock.

In selecting these, we not only retain the

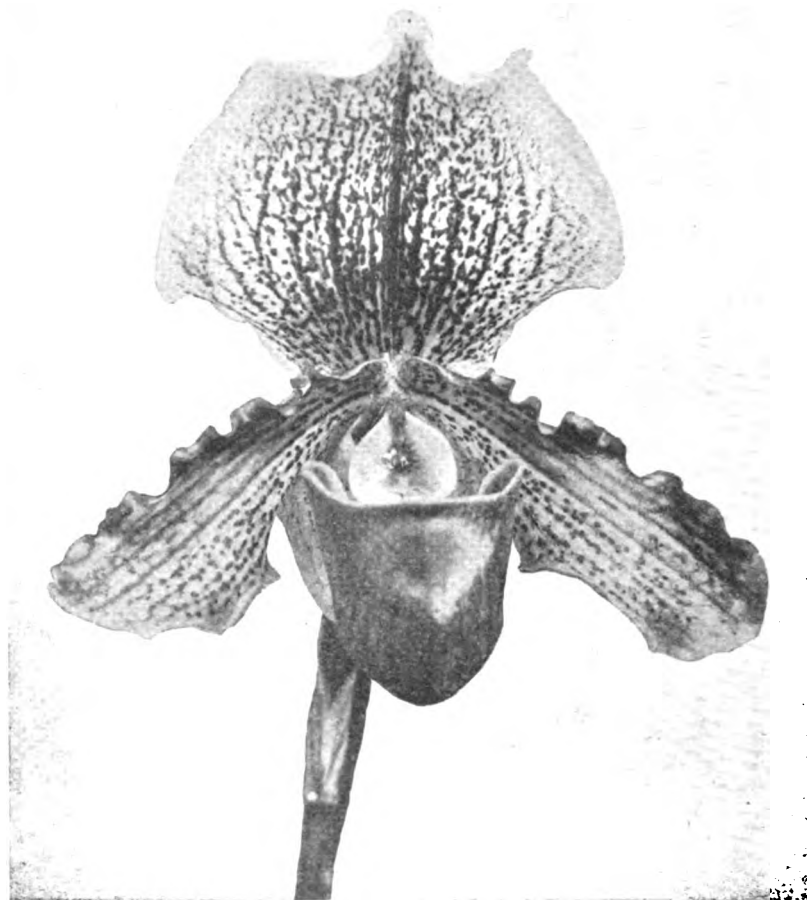


FIG. 175.—CYPRIPEDIUM ROSALIND.
R.H.S. Award of Merit, November 17. (see p. 427.)

Lobb, who sent home plants from Ecuador. It is figured in *Bot. Mag.*, t. 4426.

The Cupheas comprise an interesting group of plants of which three species are now in flower under glass. *Cuphea ignea* is the commonest in cultivation, and is a very valuable decorative plant. It is a native of Mexico, has dark green leaves and a profusion of tubular, scarlet flowers which are constricted towards the mouth. It is sometimes referred to as the Mexican Cigar plant. The seeds are small and contained in a transparent case. When they are ripe the corolla splits down, the case bursts open and the seeds are dispersed. *C. strigillosa*, or *C. cyanea*, is a taller-growing plant with foliage of pale green and red and yellow flowers. It is a native of Peru. From Mexico we obtain *C. micropetala*, which has broader leaves than either of the preceding species, and has also the largest flowers: the latter are yellow, white and red. The plant is not so tall-growing as the last species, only attaining a height of one foot, whereas *C. cyanea* rises to two feet. Robert H. Jeffers, Royal Botanic Garden, Edinburgh.

strongest but those within two feet of the main root. For the first summer these are allowed to grow, then towards the end of their second season, or in the following spring, they are carefully lifted with a spade, and in the majority of cases they will have a few roots attached. Put into the kitchen garden these never fail to develop into good flowering specimens in the course of a season or two, when they are moved to their permanent quarters. I do not find fairly young plants of *R. Coulteri* difficult to transplant (March is probably the best time), but it is generally wise to cut the growths well back.

Though it is not an universal custom we always cut our *Romneyas* down to the ground every year in April. We find that taller stems, and better and more flowers are the results of this treatment, and if the stems are loosely tied together for the winter they will help to screen the roots from frost. From the latter, however, our stock has never suffered. The young growths may get nipped by spring frosts but the plants soon overcome that.

Unlike many soft-wooded, sub-shrubby plants, *R. Coulteri* is long lived. In a warm and stony, even rocky, soil some specimens under observation have flourished for twenty years, and show not the slightest indication of loss of vigour, the flowers being as large as ever, just as numerous, and the growths six feet to seven feet high. *A. T. Johnson, N. Wales.*

THE EVODIAS.

THIS interesting genus of deciduous trees and shrubs, belonging to the natural order Rutaceae, is fairly widely distributed over Eastern Asia, and also occurs in Australia and Madagascar. It is only during the last twenty-five years that the *Evodias* have possessed much interest for cultivators of hardy trees and shrubs. During his journeyings in Western Hupeh and Western Szechuan, beginning in 1901, Mr. E. H. Wilson collected seven species and one variety which promise to be hardy in our gardens. The majority, if not all of them, are now in cultivation.

The Chinese *Evodias* are handsome trees of moderate size, allied to the *Phellodendrons*. The most useful distinguishing character is that in *Evodia* the axillary buds are exposed, while in *Phellodendron* they develop in the base of the leaf-stalk.

The *Evodias* are readily raised from seeds and thrive in ordinary garden loam. Descriptions of the trees in their native habitats suggest that in addition to their value in the pleasure grounds, the *Evodias* will be distinct and interesting trees for the fringe of, and in, the open woodland. They are attractive, fine-foliaged trees and in fruit we already know the distinctive beauty of the species illustrated, *E. hupehensis* (Fig. 176).

E. GLAUCA. According to Mr. Wilson this is one of the commonest trees in the moist woodlands of Western Hupeh. It is a small, wide-spreading tree from about twenty feet to thirty feet in height. The pinnate leaves are from six inches to, in some cases, nearly one foot long, thin and slender, compared with the other two species, described in these notes. The number of leaflets varies from five to thirteen or rarely fifteen; they are dark green above, conspicuously glaucous beneath, with red leaf-stalks, giving the tree a distinct and attractive appearance. Mr. Wilson describes the small flowers as freely borne in a rounded, much-branched, corymbose inflorescence, but I have not seen flowers from trees in cultivation.

There are specimens in the Kew Herbarium collected by Dr. Henry, and Mr. Wilson collected it during his Veitchian expedition of 1901. Apparently, however, *E. glauca* was first introduced to cultivation through seeds collected by Mr. Wilson during 1907 (No. 247 Wilson). Dode in the *Bulletin de la Société Botanique de France*, Vol. LV., 1908, described the specimens of the Veitchian Expedition, Nos. 1930 and 2210, as a new species, under the name of *E. Fargesii*, but *Plantae Wilsonianae*, Vol. 2, p. 129, gives *E. Fargesii* as a synonym of *E. glauca*.

E. HUPEHENSIS. This species was originally discovered by Dr. Henry in 1887, but for its introduction to our gardens we are indebted to Mr. Wilson. As the name suggests, the tree is a native of Western Hupeh, but it also grows in Szechuan. Mr. Wilson describes it as a very common tree in the woodlands of Western Hupeh, where it grows to a larger size than any other species of *Evodia*, varying from twenty feet up to fifty feet in height, with a short trunk up to three feet in girth. It forms a wide-spreading tree, the one at Kew, from which the spray illustrated in Fig. 176 was cut, being twenty feet high, while the branches have a spread of twenty-five feet in diameter. This is No. 387, Wilson, raised from seeds collected in Western Hupeh during the autumn of 1907.

The leaves are pinnate, seven inches to twelve inches long, and composed of five to nine leaflets, but the predominant number is seven. They are dark, glossy-green above, paler

beneath. The small, greenish-white flowers are abundantly produced during late July and August in large, broad, terminal panicles. These are quickly followed by large panicles of showy red fruits up to ten inches long and six inches wide. For fully two months one of the Kew trees proved a source of considerable attraction to visitors, its distinct beauty attracting attention from a considerable distance. When ripe the fruits open, displaying jet black seeds.

E. VELUTINA. This is readily distinguished from the other hardy *Evodias* in cultivation because of the velvety pubescence on the young shoots, leaves and flower stalks. It is a native of Western Szechuan, and according to Mr. Wilson is apparently very local in its distribution, as he only collected it in one

Considered as a foliage plant, this Japanese *Oleaster* is attractive in the elegance of its habit, and by the beauty of its broadly-oval, pointed leaves, which are a dark glossy green with the undersides silvered with a glistening metallic lustre. The new growths and young leaves are entirely sheened with this silvery whiteness, and even the little, drooping, *Fuschia*-like flowers, so deliciously fragrant, look as if they had been dipped in the same frosty lacquer.

The flowers appear in late autumn when there is little colour in the shrubbery, and the crimson fruits add to its splendid merit. Hardiness and a robust habit must also be considered with the other attributes of this desirable shrub, and it succeeds even better in a poor, dry soil than in a richer medium. This species is a native of Japan and Formosa. *A.*



FIG. 176.—EVODIA HUPEHENSIS.

district during 1908. The collector's number is No. 994, Wilson.

Native trees in the woodland are described as growing to a height of thirty-five feet to forty-five feet. The pinnate leaves are up to nine inches or ten inches long, and composed of five to eleven leaflets, very downy on both surfaces. The individual flowers are about one-eighth of an inch wide, greenish-yellow, and very freely produced during August in clusters of compound umbels at the ends of the shoots of the year. The whole inflorescence is six inches to eight inches long and wide. The fruits are brownish-purple, one-quarter inch wide, opening when ripe to shed the shining black seeds. *A. Osborn, Kew.*

ELAEAGNUS MACROPHYLLA.

SOME shrubs, perhaps the majority, reserve their main attractions for certain seasons, giving us beautiful blossoms, autumn foliage, ornamental fruits and what not, but the subject of this note can claim to be an all-the-year-round shrub, for at no season does it fail to arrest attention.

PUBLIC PARKS AND GARDENS.

ON a recent visit to Roath Park, Cardiff, I observed a specimen of *Colletia cruciata* in bloom. It is an evergreen shrub which bears small white flowers and attains an average height of six feet. I am surprised that this shrub is not planted more freely in parks and gardens of the Midlands and South of Britain for it is very beautiful and it blooms at a time when there are few other plants in flower. In Roath Park I noticed berries on both the green and variegated forms of *Aucuba japonica*. Their presence on the former was not unusual, but it was a surprise to see them on the variegated plants. I was taught, and my observation confirmed the teaching, that the variegated plants were all of the male sex. Is the Spotted Laurel losing its dioecious character? *Geo. H. Copley, N.D.H.*

The Rural District Council of Solihull proposes to purchase part of the Malvern Park Estate, at a cost of £4,800, for a recreation ground.

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THE GARDEN IN ANTIQUITY.

XVI.—GARDENS OF DAMASCUS AND SYRIA.*

A PECULIAR interest attaches to the famous gardens of Damascus, since they are immediately associated with Mahomet and his Paradise. Phillips remarks (*Flora Historica*, 1, 28) that "the situation of Damascus, with its gardens and groves, is esteemed particularly delightful; . . . and Mahomet, looking down from an elevated spot upon that beautiful city, is said to have declared that it was the lot of no man to enjoy two Paradises, and that he should abstain from entering the terrestrial lest he should lose the celestial." The extensive plain to the east of Hermon, on which the city is built, has always been famous for its wonderful fertility. Here, for ages past, have been gardens for the production of vegetables and flowers; orchards in which the Almond and Apricot, Pomegranate and Pistachio are cultivated; groves of Poplar and Walnut; fields of Maize and Corn, surrounded by hedges and underwood of such luxuriance that, seen from a distance, it is an almost unbroken sea of verdure. "The chief gardens lie along the northern bank of the river Barada; but others, interspersed with cemeteries, stretch all round the wall. Despite various drawbacks, her rich streams, bursting as they do on the very edge of the desert, and creating a delicious verdure, have won for Damascus the name of the Earthly Paradise of the Arab World."

It is to Damascus that we owe the name Damson, or the Damascene Plum, and to Pliny that we owe the identification of the name. By a curious old edict of the time of Diocletian who was proclaimed Emperor in 284 A.D., an attempt was made to regulate the prices of commodities within the bounds of the empire. "The edict being bilingual, we are able to ascertain from it the meaning of some obscure Græco-barbaric words through their Latin equivalents. Among the fruits we meet with an old acquaintance, the Damson, which was originally the Damascenum, or Plum of Damascus. We get, too, the name Pistachio in the disguised form *psittachium*." Nor must we overlook the Damask Rose, or Rose of Damascus,

the silk stuff with raised work representing flowers and other designs, or the kind woven with gold and silver flowers known as damask and damassin, showing that the famous city has been a school of arts as well as a patron of gardens from high antiquity.

What she once was she has ever been, and still is. Kinglake exclaims that this holy Damascus, this earthly Paradise of the prophet, so fair to the eyes that he dared not trust himself to tarry in her blissful shades, "is a city of hidden palaces, of copses, and gardens and fountains, and bubbling streams. . . . Every rich man's house stands detached from its neighbours at the side of a garden, and it is from this cause, no doubt, that the city has hitherto escaped destruction." After discussing city life he goes on to remark (*Eden*, Ch. XXVII) that "its gardens are the delight—the delight and pride of Damascus; they are not the formal parterres which you might expect from the Oriental taste; rather, they bring back to your mind the memory of some dark old shrubbery in our northern isle that has been charmingly un-kept up for many and many

outer frame, setting off still more strongly the green and the white. What wonder that the Arab, accustomed to the stony desert, where a green spot or a stagnant pool of water is a treasure, looks on Damascus as a vision of Paradise." If we turn to the Koran we find that the followers of the prophet are assured that the blessedness of the future state consists in dwelling in delightful gardens. Thus we read that "Whosoever doeth good works, either man or woman, shall enter into Paradise. They shall enter gardens of pleasure, together with those of their fathers or wives that have done good."

Among the many fine fruits for which Damascus has long been famous are Pears, Apples and Plums, Oranges, Lemons and Citrons, Mulberries, Figs, and Pomegranates, Pistachios, Almonds and Walnuts, to mention no others. So long ago as 1163 A.D., the city was described by Benjamin of Tudela, who states that "the city is very large and handsome, and is enclosed with a wall, and surrounded by a beautiful country, which, in a circuit of fifteen miles, presents the richest gardens and orchards,

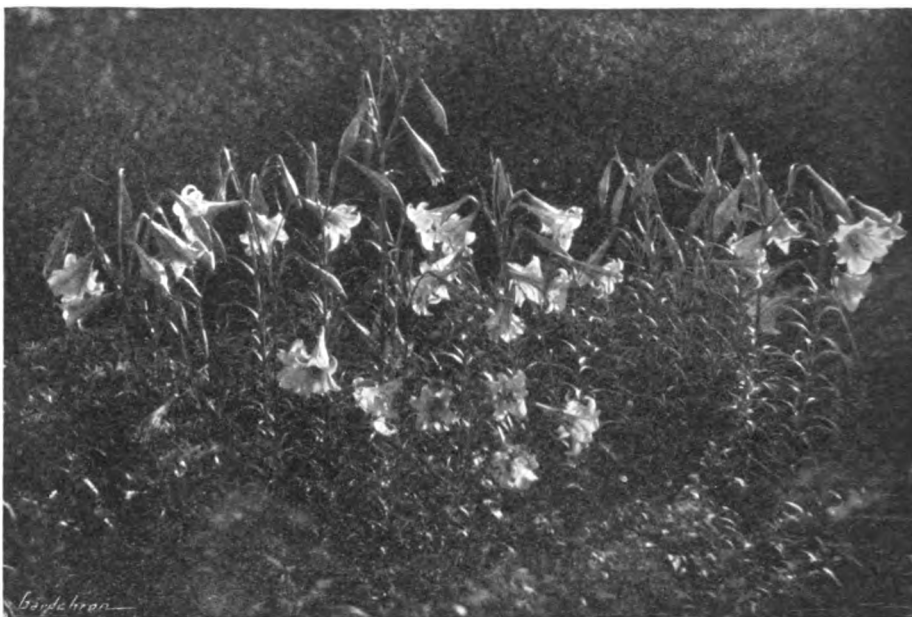


FIG. 177—LILIAM PHILIPPINENSE VAR. FORMOSANA AT LOGAN.

a day . . . Wild as that, but without its sweet sadness, is the sumptuous garden of Damascus. Forest trees, tall and stately enough, with their branches struggling against strong numbers of bushes and wilful shrubs. High above your head, and on every side all down to the ground, the thicket is hemmed in and choked up by the interlacing boughs that droop with the weight of Roses, and load the slow air with their damask breath. The Rose trees which I saw were all of the kind we call 'damask,' they grow to an immense height and size. There are no other flowers. Here and there, there are patches of ground made clear from the cover, and these are either carelessly planted with some common and useful vegetable, or else left free to the wayward ways of Nature. Never for an instant will the people of Damascus attempt to separate the idea of bliss from these wild gardens and rushing waters."

This is confirmed by many travellers, ancient and modern. "An Arab thinks that to sit in a luxuriant garden in which he can hear the tinkling of the rushing of a flowing stream is the acme of delight. It needs only a few hours to be Paradise. Such is Damascus. From our view point we see the white city resplendent in the rays of the setting sun. It is framed by the green gardens encompassing it on all sides. The barren desert beyond makes a brown

in such numbers and beauty as to be without equal upon earth." He adds that the Barzar runs between the gardens and orchards in the outskirts of the city, supplying them copiously with water, and making the soil rich and fertile. Nearly three centuries later another traveller, M. de la Brocquière (1432 A.D.) wrote: "During the stay of the caravan at Damascus I made a pilgrimage about sixteen miles distant to our Lady of Serdenay. To arrive there we travelled a mountain a full quarter of a mile in length, to which the gardens of Damascus extend. We then descended into a delightful valley, full of vineyards and gardens, with a handsome fountain of excellent water." Similarly, Maundrell was here in the spring of 1697, and wrote that Damascus is encompassed with gardens extending no less, according to some estimates, than thirty miles round, which makes it look like a noble city in a vast wood. The gardens are thick-set with fruit trees of all kinds, kept fresh and verdant by the waters of Barzady. You discover in them many turrets and steeples and summer houses, frequently peeping out from among the green boughs, which may be conceived to add no small beauty to the prospect. His account of the gardens and palace at Beirut are in a similar strain. "Went to view the palace (he writes), which stands on the north east part of the city of Beirut. At the entrance of it is a marble fountain . . . but the

* Previous articles on "The Garden in Antiquity" by the Rev. Hilderic Friend" appeared in our issues for February 7; February 21; March 12; April 11; April 25; May 30; June 20; July 25; August 8; August 22; September 12; September 26; October 17; October 31, and November 14, 1925.

best sight that this palace affords, and the most worthy to be remembered, is the range garden. It contains a large quadrangular plot of ground, divided into sixteen lesser squares, four in a row, with walks between them. The walks are shaded with Orange trees of a large spreading size, and all of so fine a growth, both for stem and head, that one cannot imagine anything more perfect of its kind. They were, at the time, when we were there, (viz., March 18, 1697), as it were gilded with fruit, hanging thicker upon them than ever I saw Apples in England. Every one of these sixteen lesser squares in the garden was bordered with stone, and in the stonework were troughs, very artificially contrived, for conveying the water all over the garden." For students of old-time garden literature *Early Travels in Palestine* is invaluable.

If we enquire into the causes of this wonderful fertility, we find that the first place must be assigned to the river called El-Barada, or "the cool (stream)" which "bursts through the limestone ramparts on the north, to fling itself in many a refreshing stream over the surface of the plain; and to the waters of El-Awaj, "the crooked," which, coming down from the eastern slopes of Great Hermon, flow through the southern meadows. Sometimes it is also due to the protection of the desert hills in the east, which in a measure bar the way against the drifting sand-storms from the wilderness.

We add a word in conclusion respecting Syria, a name which first meets us in the writings of Herodotus, who informs us that Egypt is unlike Arabia or Syria, and adds that the maritime parts of Arabia are inhabited by Syrians. These parts are better known in modern days as Palestine, or the Holy Land; and the gardens will therefore be more fittingly dealt with when we treat of the Hebrews and their horticultural knowledge. Syria, however, is a wider term than Palestine, and includes both animals and plants which are not to be found in the narrower region of the Holy Land. But as all that was best in relation to agriculture and horticulture centred around Damascus, we may take it that Syrian garden lore is summed up in the foregoing. While in the neighbourhood of towns there were large and productive gardens and orchards for the cultivation of flowers, gourds, fruits, and Nuts, other plots of ground were in very early times set apart for the growth of Flax, Hemp, Madder-roots, with Cotton, Tobacco and many other serviceable plants. The Olive and Apricot not only supplied fruit but firewood, and in some districts the Cypress, Plane, Palm, and other trees were cared for on account of their great utility. From Herodotus and Strabo, Xenophon, Pliny, and other early writers, a great deal of information may be obtained on these subjects, and to these the reader who desires further knowledge of Syrian garden-craft may be referred. *Hilderic Friend.*

LILIES AT LOGAN.

LILIUM PHILIPPINENSE VAR. *FORMOSANA* has grown remarkably well at Logan, and the accompanying illustration (Fig. 177) shows a group of this Lily with stems rising to a height of five feet. In the group shown there were ninety flowers. The plants were raised from seeds, and the seedlings were pricked out, when one year old, into wooden boxes, in which they remained until the spring, when they were planted out-of-doors, an inch deep, *en bloc*, without any division or disturbance of the roots. The sides and bottom of the box were, of course, removed. Another boxful of young plants was treated in similar fashion and with equally good results, but of several hundred bulbs taken out of other boxes and planted out carefully, nearly all failed to grow, indeed very few lived.

The second illustration (Fig. 178) is reproduced from a photograph taken here, in the woodland, in August last. This represents a group of *Lilium auratum* flowering for the third year in succession after planting. Several of the flowering stems exceeded nine feet in height. *Kenneth McDouall, Logan, Wigtownshire.*

BEAUTIFUL CLIMBING PLANTS IN RIVIERA GARDENS.

(Continued from page 409).

BIGNONIAS.

It is a little difficult to decide which should take first place amongst these beautiful climbers, but when seen at its best, *B. buccinatoria* (syn. *B. Cherère*) presents a wonderful sight, with its trusses of long, tubular flowers, covering the sides of a villa, or climbing over an expanse of wall. Like most of the Bignonias, it must

of long, Bean-like pods, from twelve to fifteen inches in length.

B. venusta is becoming more abundant in our Riviera gardens, but is seldom seen at its best because the position chosen for it is generally unsuitable. The warmest, sunniest spot is essential, and it is not free-flowering until it becomes hard-wooded. The deep orange flowers are produced in clusters during summer, and often through the winter and spring months.

B. (Tecoma) grandiflora when seen at its best is a handsome climber. At the Villa Valetta, Cannes, there are one or two very fine specimens which originally were trained

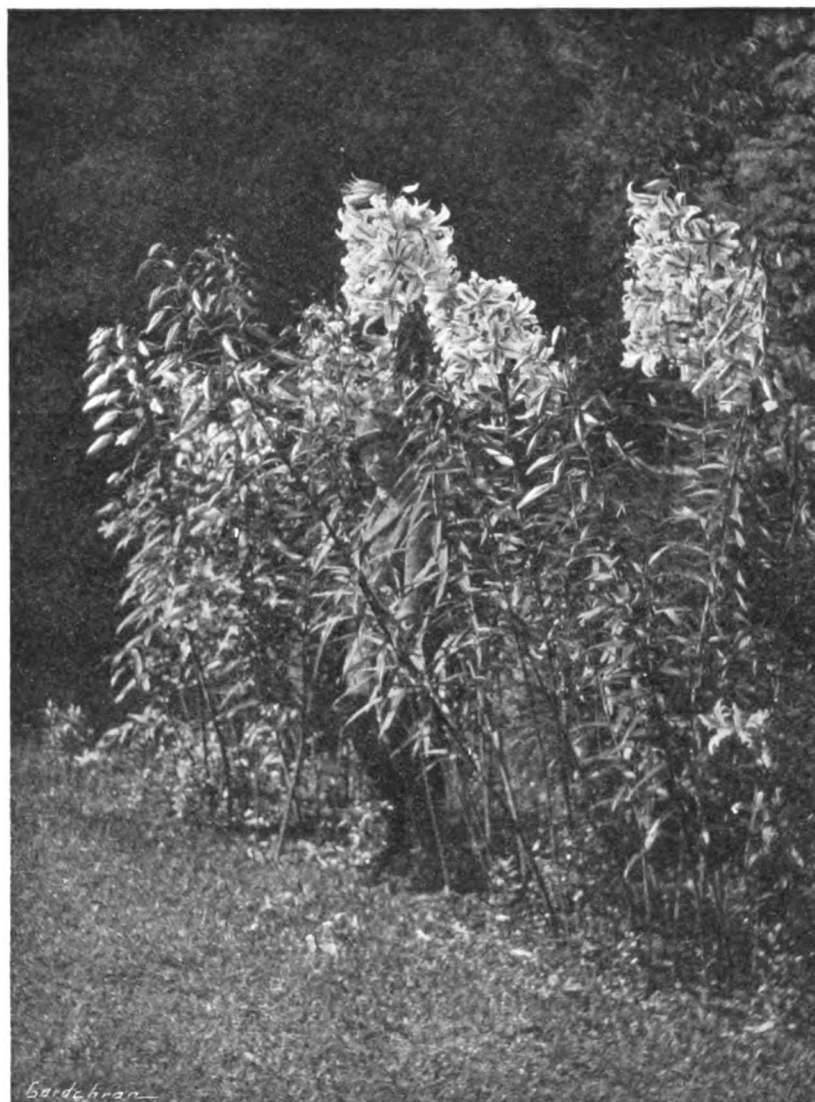


FIG. 178.—*LILIUM AURATUM* AT LOGAN.

become quite hard-wooded before it flowers profusely from the short growths which are vigorously-spurred back each season. The individual flowers measure four inches in length and two inches across; their colour is brownish-crimson, with amber-coloured tube, and there are from four to eight flowers in a cluster. This species is distinctly a summer bloomer, being at its best in June and July.

B. Tweediana is distinct from all other Bignonias, and, like the preceding, flowers in summer. Unlike most others, it has claw-like tendrils, and adheres to anything it comes in contact with. No spot seems too sunny or arid for it, and when in flower it presents a lovely sight with its large, yellow, Allamanda-like flowers succeeded later by an abundance

to the stems of Palms, but the Palm trunks having been removed, they present imposing features as single specimens. Being of more or less rigid growth they adapt themselves to training against high walls or the trunks of Palms. When trained to the latter, liberal treatment is necessary, or the Palm roots will rob them of their vigour.

B. (Tecoma) radicans, sometimes met with in its natural beauty, is such a vigorous grower when well-established that it is generally subjected to ruthless pruning and becomes unsightly. If allowed to ramble at will into an old Olive tree, or, better still, a False Pepper (*Schinus Molle*) it becomes a beautiful sight with its fine clusters of flowers carried beyond the foliage of its support.

TECOMA.

Closely allied to the Bignonias, most of the Tecomas flourish here. The one most commonly met with is probably *T. capensis*, although *T. velutina* is very fine when seen rambling at will. This flowers in summer, whereas *T. capensis* is generally at its best from September to November.

Tecoma Smithii is of more shrubby habit, and when at its best in the autumn—if subjected to hard pruning in May—it presents a fine sight with its large heads of orange and red flowers.

With Tecomas, as well as Bignonias, the time and manner of pruning governs the after results. There is a finger and thumb rule which prevails out here, that certain things should be done at certain dates, whereas in many cases the pruning and after treatment may be varied so as to control the dates or season of many things and bring them into flower when they are most desired.

WISTARIA.

I doubt whether the *Wistaria* flourishes anywhere better than along the Riviera, where it grows luxuriantly. The rapidity with which it grows and covers large areas in a comparatively short time accounts for its frequent and varied uses. Twining around anything it comes in contact with it soon asserts the mastery and when it becomes hard-wooded it flowers with a profusion never seen in more northern climates. I remember a very old garden I saw some years ago where a fine *Wistaria* festooned an old pergola with its thousands of pendant racemes; this specimen was said to cover over 200 yards in length. When at its best, this presented a sight not easily forgotten, but alas! it is no more, canker having set in at the base and destroyed it.

At the Villa Madrid, Cannes, a fine effect is produced by training a specimen to the trunks of a group of very tall plants of *Washingtonia filifera*, to a height of ten to fifteen feet, and then carrying festoons from one stem to the other; the partial shade afforded by the Palms preserves the colour of the flowers for a longer period than usual. When *Wistarias* are fully exposed to sunshine, and especially after a shower, the colour of the flowers soon fades. When rambling amongst Olive trees, as at the Villa Maryland, Cap Ferrat, or even when grown as a large specimen in the open and trained to lofty poles, the effect is sure to arrest attention.

Wistaria sinensis is commonly grown, but the vars. *alba*, *multijuga* and *flore pleno* are often met with; the double variety flowers later than the others, and its flowers are darker in colour, but these fade earlier than those of the other varieties.

BUDDLEIA.

Although about half-a-dozen *Buddleias* are met with, there is practically only one of any particular value for winter flowering in Riviera gardens and that is *B. madagascariensis*, which is planted very commonly and is most useful for covering large areas in a very short time.

A small plant, given suitable conditions, will easily cover a space of ten to fifteen feet square in one season; or if planted amongst tall-growing shrubs, its long, slender growths soon surmount those of its neighbours and give a very pleasing effect, with their long, semi-drooping sprays of orange flowers.

Ample space and liberty of growth are the two essentials of this species, for if too restricted by pruning, it eventually becomes stunted in growth and loses its graceful effect.

Other *Buddleias*, such as *B. Lindleyana* and *B. asiatica* are grown for forming screens rather than for the floral effect they produce.

B. variabilis in variety is grown, but chiefly by summer residents as it is distinctly summer-flowering. *F. W. Smith.*

(To be continued.)

VINE MILDew.

I was very interested to read the opinions of two prominent horticulturists on this subject, a little over a year ago, in *Gard. Chron.*, vol. LXXV., pp. 292 and 344, and it may be of interest to your readers to give our experience in getting rid of this troublesome disease at Wisley.

I believe that mildew has been troublesome at Wisley to a greater or lesser degree since the viney was planted, about the year 1905; I can definitely state from my own personal experience that since the year 1911 to 1923 inclusive, the house has never for one season been free of this disease. Certain varieties seem very susceptible, amongst them Golden Queen, Appley Towers, West's St. Peters, Lady Hutt, Gros Colmar and Cornichon Blanc.

For the benefit of those who are not acquainted with the Wisley viney it will be as well to explain that the structure is a span-roofed house facing east and west, one hundred feet long, thirty feet wide and thirteen feet high at the apex.

The house contains forty varieties of Grapes, one rod of each kind, and although divided into three compartments, is more or less treated as one. The heating is effected by two flow and two return four-inch pipes on each side of the house, entering at the north end. These have an unbroken run of 100 feet, which means a certain variation of heat between the place of entering the house and the farthest point reached. I mention this because the heating system was blamed for the frequent attacks of mildew. Although each compartment was affected, the attack varied in intensity from slight in the warm end to very bad in the coolest part. It must be understood that this cool end was only cool from the point of artificial heating, but warmest through its southern aspect. Once the mildew was established, the conditions prevailing in the south end would undoubtedly favour its development.

Various remedies have been tried from time to time, including the application of flowers of sulphur to the parts affected so soon as the disease made its appearance. Sulphur vaporising was also tried. Very strict attention was given to watering, ventilating, and regulating the amount of atmospheric moisture. Although benefit was derived from these treatments they only had the effect of checking the spread of the disease after a certain amount of damage had been done, and the mildew more or less ran its course. There has always been some resting mycelium on the laterals during the winter. The vines are not unduly forced, generally flowering from early to mid-May. Black Hamburg is usually ready for the first thinning about May 22.

From observation, it was noticed that mildew generally made its appearance about ten days before the vines commenced to flower, and a careful watch was always maintained for the first outbreak. It was at this stage that sulphur was first applied, which proved by later experience to be not early enough. Frequent dusting was carried out at weekly intervals so long as the mildew was active, which often meant until the Grapes were nearly ripe, when the mildew changed to its winter resting stage. During the spring of 1924, it was decided to apply the sulphur about ten days or a fortnight before the time the mildew generally made its appearance, the laterals being at this stage about twelve to fifteen inches long, according to variety. This was accomplished by giving all the shoots a light sprinkling of green sulphur, and continuing its application at weekly intervals until the flowers opened.

Then the use of sulphur was suspended until the berries had set. A final application was given when the young berries were about the size of Peas. No ill-effect was experienced in this instance, and during the whole of the season no trace of mildew was found. This treatment was repeated during the past season, with the exception that sulphur was not applied after flowering. No mildew was discovered until July 13, when for some unaccountable reason, two or three berries on one bunch of Lady Hutt were found to be attacked. These were promptly removed, and no sign of any further outbreak was discovered.

For the past two seasons the ripened wood has been entirely free of those irregular black blotches that were so very noticeable at the time of pruning during previous years. I think it important to state that there had been no alteration in the cultural treatment during the past ten years with the exception of that already mentioned.

The winter cleansing has consisted of washing the rods with a solution of soft soap and water, and one year this was supplemented with Burgundy mixture, which did not prevent the mildew attack the following season.

A further trial of this sulphur treatment was given in respect to a quantity of seedling vines and a few named varieties growing in a large house close to the one already mentioned. In the autumn of 1916 numbers of seedlings were raised from the permanent collection. These, during their first season, and each succeeding year, including 1924, were badly infected with mildew. On the strength of the experience in the behaviour of the large viney in 1924, this house was subjected during the past year to similar treatment, with the gratifying result that mildew made no appearance there this season. A difference noted in this instance was that sulphur applied after the berries were formed had a slight burning effect where the sulphur actually came in contact with the young berry. This was especially noticeable in the case of Black Hamburg. In this particular instance, I think the burning was due to the lack of covering foliage owing to the vines being quite small ones in pots and standing some considerable distance apart. The bunches that were injured were exposed to full sunshine.

I cannot state definitely that this sulphur treatment was responsible for the mildew disappearing after so many years activity, or on the other hand, if it really was effective, whether it is a question of the sulphur being applied before the growth reaches a certain stage of development, or again, if it was necessary for it to be done at a certain period of the year. To make this more clear, let us imagine two vineeries being started into growth, one on December 1 and the other on February 1, and both being given, more or less identical treatment, making allowances for season. If the first theory is right, the first sulphuring would be done in each case when the laterals had made a certain amount of growth, which would naturally mean that the house started first would require treatment a month or six weeks in advance of the later one. If the latter supposition held good, both houses would require their first sulphuring on the same day. It would be interesting if others would give this treatment a trial with a view to comparing the results obtained.

In conclusion, I should like to emphasize the necessity for applying the sulphur in anticipation of an attack, and not, as is so frequently advocated, "so soon as the mildew makes its appearance."

Probably, if this policy was adopted in the case of some other diseases, we should find the true value of these preventive measures. *J. Wilson, Wisley.*

LATE WASPS' NESTS.

I was surprised to learn about ten days ago, that members of the garden staff here, while engaged in raking leaves, had come upon two wasps' nests with the inmates of sufficient energy to give the intruders a warm reception. This is surely very late in the season for wasps to be active. I made investigation of a nest which had been formed in a decayed tree stump. It consisted of seven layers of combs enveloped in the usual paper-like covering, and in the centre I counted between thirty and forty fully-developed queen wasps. Numbers of workers were also observed, and, needless to state, the whole were speedily destroyed. If these thirty or forty queens had survived would they have been the start of an equal number of "bykes"? If so, the destruction of late nests is of very great importance in ridding us of wasps for the following year. *A. T. Harrison, Culzean Castle Gardens, November 23.*

MESEMBRYANTHEMUM.

(Continued from page 413.)

23. Stems or flowering-branches erect, stout; leaves withering and persisting as sharp spines, or (on dried specimens) their bases persisting as hard fragments; flowers in terminal cymes; calyx-lobes with spine-like tips or acuminate

15, *Amoebophyllum*

Stems decumbent or prostrate from a tuberous or fleshy rootstock, not stout; leaves sometimes withering into spines; flowers terminal and solitary or becoming lateral and scattered along the branches opposite the leaves

16, *Sphalmanthus*

24. Leaves small and united at the base into a short sheath bearing a ring of deflexed hairs or cilia, with the free part subulate, subterete or deltoid; very dwarf bushy plants, densely branched

36, *Trichocyclus*

Leaves sessile, without a ring of deflexed hairs or cilia at their base

25

25. Bushes or bushily branched plants, erect or in a few species decumbent; internodes evident on all parts; leaves terete, semiterete or trigonous, withering and often deciduous and leaving naked stems

26

Not bushily branched plants; flowering-branches decumbent or procumbent, or the whole plant prostrate; internodes on the main stem often quite absent; leaves linear-lanceolate or flattish, or in some species subterete

18, *Prenia*

23. Corolla small, usually 3-6 (rarely up to 9) lines in diameter; seeds very small, $\frac{1}{4}$ - $\frac{1}{2}$ (rarely $\frac{3}{4}$) line in diameter, nearly smooth or minutely granulate

35, *Palaecaulon*

Corolla showy, 9-20 lines in diameter; seeds $\frac{1}{2}$ to nearly 1 line in diameter, compressed, crested-tuberculate on the margin

37, *Ariaria*

From 18. *Placentis* on the outer wall or floor of the cells (to end).

27. Leaves all alternate, arranged in large or small tufts, not dotted

28

Leaves all opposite

29

28. Leaves $\frac{1}{2}$ -1 inch long, 5-9 in a tuft, erect, convexly-truncate and without chlorophyll at the apex*, slightly tapering downwards; flower sessile or subsessile, purple; stigmas 5

33, *Frithia*

Leaves 3-9 inches long, narrow, acute, soft; flowers pedicellate, large, yellow; stigmas 10-20

26, *Conicosia*

23. One leaf of each pair much longer and larger than the other, united at the base into a solid-looking body, usually only 1-2 pairs to a growth, and the plant stemless or with short prostrate stems; stigmas 6-7

5, *Gibbacum*

Leaves of each pair about equal in length and size

30

31. Leaves all radical, erect, tufted, club-shaped, convexly truncate and without chlorophyll (green colouring matter) at the apex*; flowers large, showy; stigmas 10-11

32, *Fenestraria*

Leaves not or very rarely club-shaped, never truncate nor without colouring matter at the apex; flowers and stigmas variable

31

31. Fruit indehiscent (no valves), fleshy, edible; stems trailing; leaves acutely trigonous; flowers large, showy; stigmas 10-16

43, *Carpobrotus*

Fruit a dry capsule opening when wetted by spreading or reflexed valves provided with expanding-keels

32

32. Stigma one, sessile, circular or oval (not so in any other genera). Stemless or without internodes between the leaf-pairs; leaves 2-4 to a growth, very smooth, dotless; stamens all, or the inner,

bent down into the calyx-tube; ovary and fruit 10-24-celled and the cells of the fruit nearly closed by a large tubercle at the opening

Stigmas and cells of the ovary and fruit 4-20; stamens erect and visible in all except 41, *Piquetia*, and 42, *Erepsia*

33

33. Leaves not more and usually less than twice as long as broad, ovate to oblong, flat above, white or whitish; flower sessile or subsessile

6, *Argyroderma*

Leaves several times as long as broad when adult, erect, semiterete, not white; flower on a pedicel half as long as the leaves

7, *Roodia*

34. Stemless plants without internodes, with 1-2 pair of short, thick, ovate leaves, from broader than long to about twice as long as broad, grey-green or brownish, dotted, flowers large and showy

35

Plants either with distinct internodes between some or all of the leaf-pairs, or without internodes and with leaves (which are never ovate) three to several times as long as broad

36

35. Flowers terminal and central between the leaves, stigmas 9-14

9, *Pleiospilos*

Flowers lateral, one on each side of the plant from the axils of old leaves; stigmas 6

10, *Didymotus*

36. Cells of the capsule open, without cell-wings, exposing the seeds, no tubercle at the mouth of the cells; branches decumbent or prostrate and often forming matted clumps, or stemless with branching tuberous rootstock; leaves soft, minutely or distinctly papulose, green, without radiating bristles at their tips; stigmas 5

38, *Delosperma*

Cells of the capsule roofed with cell-wings

37

37. Cells of the capsule partly closed by a large tubercle at the opening, which in 25, *Cephalophyllum*, is partly hidden by the cell-wings; stigmas 5-20

38

Cells of the capsule without a tubercle at the opening; stigmas 4-10

42

38. Stigmas, valves and cells of the fruit 5; expanding-keels of the valves widely separated (nearly 1 line apart) at the base, diverging; tubercle at the opening to each cell two-lobed (not so in any other known genus); stems prostrate, with distinct internodes

39, *Disphyma*

Stigmas, valves and cells of the fruit 8-20 (in *Glottiphyllum* ochraceum 7-8 only*), expanding-keels closely together at the base or not widely separated there; tubercle at the opening to each cell entire

39

39. Leaves soft and pulpy and not dotted, long, strap or tongue-shaped and entire, or subterete with or without two blunt teeth on the face, grass-green or yellowish-green; flowers large, yellow; stigmas 7-10

12, *Glottiphyllum*

Leaves firm, pellucid-dotted or with usually conspicuous dark or white dots, rarely (and only in 8, *Cheiridopsis*) entirely white without dots; stigmas 8-20

40

40. The inner or only pair of leaves present on each growth when the plant is at rest erect, acute, closed together and somewhat resembling a bird's beak, and surrounded by or their basal part enclosed in a sheath formed by the withered united part of the previous pair, conspicuously dotted, rarely white without dots; stigmas 8-19

8, *Cheiridopsis*

Leaves when the plant is at rest spreading or not closed together so as to resemble a bird's beak, and the basal part not enclosed in a withered sheath

41

41. Leaves in 1-3 pairs to a growth, elongated, spreading, very stout, obtuse without internodes between the pairs, greyish-green or brownish, conspicuously dotted with a darker colour; stigmas 9-15

11, *Punctillaria*

Leaves ascending or spreading, crowded or in tufts or, on the flowering-branches, with distinct internodes between the pairs, subterete or trigonous, not stout, finely pellucid-dotted when held against the light, stigmas 10-20

33

25 *Cephalophyllum*

42. Stigmas and cells of the ovary and fruit normally 5-6, rarely 4 or 7. Plants sometimes stemless, but mostly with erect or prostrate branches with distinct internodes between the leaf-pairs

43

Stigmas and cells of the ovary and fruit normally 7-10

44

43. Stamens evident, erect, loose or collected into a column or cone, with or without staminodes around them; calyx not produced above its union with the ovary into a tube or cup; petals not talked

40, *Mesembryanthemum*

Stamens nearly or quite hidden under a mass of inflexed staminodes and incurved or bent down into the short calyx-tube that is produced above the ovary; petals linear-spathulate or cuneately linear

42, *Erepsia*

44. Very dwarf stemless plants with thick subfleshy rootstock and with the leaves in tufts of 3-6 pairs to a growth, dotted, without internodes between them; flowers sessile or subsessile, stamens conspicuous, erect

34, *Nananthus*

Shrubby plant with distinct intervals between the leaf-pairs; calyx produced into a broad cup above the ovary; petals with long stalks and small obovate or elliptic blades; stamens hidden under a dome of inarched staminodes and petals

41, *Piquetia*

N.B.—In reference to the above Key, as it has been found that the more usual type of Key would have involved the loss of a great deal of valuable space, the above type has been adopted, although it is not so clear or easy to use. To those who are not accustomed to this kind of Key it may be useful to explain that to use it the reader must first find out if his plant belongs to the group A or group B. Supposing the plant in question has flat leaves, it will belong to group A. Then turning to the coupled and numbered paragraphs, beginning at number 1, it is found that if the leaves, or some of them, are alternate, the reader must refer to the coupled paragraphs number 2, as indicated by that figure on the right hand side of the text, under which two genera are found characterised (*Hydrodea* and *Cryophytum*), and from the contrasted characters there given the genus can be ascertained. But if the leaves are all opposite we are directed to the couplet number 3, and again from that couplet to couplets 4 and 11 respectively, and so on, until the genus is found by the characters that fit the plant. The number before each generic name indicates the numbered position of the genus in the sequence adopted. N. E. Brown.

(To be continued.)

VEGETABLE GARDEN.

THE CABBAGE IN AMERICA.

So far as the writer is aware, there is no variety of esculent *Brassica* which has originated in America; therefore, that country is indebted to the eastern hemisphere for what it possesses of these crops. There is, however, a variety named Green-glazed American, but it is doubtful if it is of American origin. Its value for the Southern States consists in its resisting both heat and insects. It hearts indifferently. Although it has been grown successfully in the trial grounds at Witham, the writer has not been tempted to test its edibility; the name is a very good description. *The Vegetable Garden* states, "It is often sent to table shredded in vinegar like red Cabbage." The negroes would no doubt relish it if accompanied by a

* This can easily be seen by cutting off the top of a leaf and holding it against the light.

* I cannot obtain fruits of this plant but believe it to be wrongly placed under *Glottiphyllum*.

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nice breast of chicken from a neighbouring barnyard.

While, however, the Cabbage is not a native American vegetable, it is one to which the white folks have taken very kindly and to the culture of which they have given diligent and intelligent care, with the result that some of the best varieties now in existence are due to their initiative and practically a new race has been developed, mostly of the Drumhead type, very solid and with very few outside leaves. The comparatively loose, conical, English varieties of the Early Battersea type will not withstand the extremes of heat and cold to which the United States is subject, while the difficulties of culture necessarily add to the cost of production. As regards culture, the very early small varieties are sown on hot-beds or indoors during February, and by judicious treatment the plants are ready for transplanting when the winter breaks up, and vegetable life is in evidence again. In districts which usually have a fairly temperate climate, like Boston, New York and Philadelphia, such varieties as Early York, Express, Etampes and Flat Parisian may be sown, but the most important variety, especially for market growers, is the Early Jersey Wakefield, first introduced from England about the middle of the nineteenth century. Thorne's Early Wakefield, a conical variety, had a good reputation, especially in the midland counties of England at that time, but other good varieties have now taken its place. Of this, and a rather larger and later form known as Charleston Wakefield, there is more seed sown than of all the other early varieties put together. The foregoing and lesser quantities of Winnigstadt, Copenhagen Market, and Allhead Drumhead, for a later crop, complete the list for the earliest sowings.

For second sowings such midseason varieties as All Seasons and Succession are sown out-of-doors, while for latest sowings Surehead, Fottler's Brunswick, Marblehead Mammoth, and Danish Ball Head are the principal varieties which are relied upon for winter supplies.

In addition to the ordinary demand for boiling purposes which with a population of nearly 120,000,000 is considerable, there is a large demand from the German element for Sauer Kraut, and from those who can eat and afford the luscious oyster, a considerable demand for "cold slaw." For the latter a very early variety named Alpha is in great demand, while for Sauer Kraut the manufacturers prefer the flat Dutch type, a solid head of good size, and medium earliness.

The chief difficulty for American market growers is how to supply fresh Cabbages in good condition during the winter months when the fields are frozen hard or buried in snow. At one time, ship loads of fresh Cabbages were sent over to America from Holland and Denmark. For this purpose flat Dutch types and Danish Ball Head were particularly useful, and in the case of the latter a fully developed head, however small, is as solid as a skittle ball. Efforts have been made, some of them successfully, to acclimatise the strain in America, and methods of protection have been devised by means of which the growers are able, often at considerable expense, to maintain deliveries all the winter through. *S. B. Dicks.*

AUTUMN AND WINTER CABBAGES.

MANY growers seem to become a little bewildered as to what type of Cabbage grows best during the autumn and winter months and will be the most profitable. There are many varieties to choose from, and many of these do not receive the attention they are entitled to. When really well-grown the Cabbage is excellent, but, of course, I am not alluding to those coarse specimens one so often sees in the market, but quickly grown, tender specimens.

Certain growers adhere to the well-known Rosette and Hardy Green Coleworts; the latter is perhaps one of the best early autumn Cabbages, but to my mind it is not so hardy as Early Gem, which is really excellent for winter use. If sown in mid-July this variety will make splendid heads for use right through the winter, and will withstand the hardest weather. Another good autumn Cabbage is Sutton's Favourite, which

has a very compact head of first-class quality. It is very similar to Winnigstadt, but is most desirable for winter use. Those requiring a good mid-winter Cabbage cannot do better than grow St. John's Day; in years gone by this was a great favourite.

Among late winter varieties we have Christmas Drumhead and Veitch's Drumhead, and of these the former is distinctly the better one for maintaining a supply in late winter, and although it is smaller than the well-known Coleworts referred to above, it is certainly superior in quality. *E. Barton, Sunnyside Gardens, Tansley, Matlock.*

FORCING VEGETABLES.

OF the multifarious duties which the gardener is called upon to discharge during the year, that of supplying the table with forced vegetables during the winter is by no means the least important.

Forcing vegetables may not be such a highly skilled art as forcing fruit, yet it is essential that the cultivator should have some knowledge of the work, and he must exercise the greatest watchfulness or the results will be far from satisfactory. Knowing from many years' experience and close observation the importance, in forcing vegetables, of doing everything in the right way and at the right time, it has occurred to me that a few remarks on the subject at this season may be useful to readers.

There is a large element of truth in the maxim "Well begun is half-done," and a most important factor in forcing vegetables is to have everything in readiness at the beginning of the season, so that each crop may be started early enough to admit of its being ready when required, without having to be hastened with more fire-heat than is really necessary to bring it to perfection. A properly constructed forcing pit is an acquisition to the grower who is called on to maintain regular supplies, but in many cases satisfactory results may be obtained with the most primitive contrivances. Even if a forcing house is available, a well-prepared hot-bed of fermenting material is a very great aid; without the forcing house the hot-bed is indispensable, and too much care cannot be bestowed on the preparation of it. Stable manure and leaves, thoroughly mixed in about equal proportions, are considered to be the best materials for the making of a hot-bed, and if stable manure is procurable I can recommend the following of this formula. If stable manure is not procurable, however, it need cause no inconvenience, for any coarse grass or herbage mixed with leaves in the same way will generate a gentle and lasting warmth which is all that is needed in a hot-bed.

A word on the preparation of the materials may be useful. The essential factors are thorough mixing and uniformity of moisture throughout the mass. There seems to be an idea in many quarters that heat must be given off by routine turning, but this is wrong in principle, as heat so lost cannot be regained, and heat is the object of the hot-bed. Turning the heap on two or three occasions in the early stages of fermentation to ensure uniformity of material and moisture, is good practice, but so soon as the material has reached a uniform stage of fermentation it should be used immediately to prevent further loss of heat.

Another important factor is consolidation, and, whether the purpose of the hot-bed is to supplement the warmth in already heated pits or to supply the only source of heat in frames or improvised structures, consolidation of the mass should be thorough and uniform. The rate of oxidation in the made hot-bed is largely governed by the amount of oxygen that can reach the fermenting material, and the tighter the material is packed the less the amount of air that can enter, hence a well-consolidated heap will oxidise more slowly and generate heat over a longer period than a loosely-built one.

Every possible means should be employed to conserve the heat thus generated, and it should be a regular practice to cover the pits and frames with well-made covers which can be securely attached.

Even without the aid of a heated pit and by the use of hot-beds, frames and improvised structures alone, large numbers of vegetables and salads may be forced successfully during the whole of the winter, including Asparagus, Carrots, Lettuces, Potatoes, Turnips, Radishes, Rhubarb, Seakale, Witloof Chicory and Spinach. It is not impossible to grow French Beans on similar lines, but much skilled attention is necessary to get good results with these, and a heated pit is much to be preferred.

For very early supplies of Asparagus a heated pit is preferable, but this vegetable may quite well be produced in frames over hot-beds. In either case, the main points in ensuring successful results are to start the roots into growth steadily, and to ventilate the pit freely when the young shoots are growing. The best roots for forcing are strong three-year-old crowns grown for the purpose, and they should be lifted with a moderate amount of soil adhering to the ball and packed closely together on a layer of soil over the hot-bed.

Carrots should be grown in frames with six inches or eight inches of fine soil on the hot-bed, the surface of the soil being brought to within four inches of the glass. More weight of crop can be obtained from broadcast sowing, but thin sowing should be practised, and a sharp watch kept for weeds in the early stages of growth.

Lettuces, Turnips, Radishes and Spinach may be grown under similar conditions, varying the depth of the frame and spacing of the plants according to the needs of the subject.

Potatoes need more depth of frame, and brick pits are better than ordinary frames. After making a good hot-bed, space should be allowed for at least twelve inches of soil, and as much additional room for top growth. The compost should be rich and light, and if the tubers are sprouted in a warm room or house, a substantial gain in time will be secured. Radishes may be sown with the Potatoes, as they will be ready for use before the latter are far advanced in growth.

Seakale and Witloof Chicory are easily grown in improvised structures on hot-beds if good roots have been prepared for the purpose, and where large supplies are needed this is the best method of producing these crops. It is good practice to expose the roots to frost for a few days before introducing them to heat, as they then respond more readily to the treatment. When the roots are prepared, a wooden structure should be placed on a well-made hot-bed. This should be of sufficient depth to allow the roots to be planted and leave about one foot of space overhead. This space may be filled with clean leaf-mould and the whole securely covered until growth for cutting is produced. Leaf-mould is a perfect blanching agent, and the resulting heads of growth will be more compact than if the space is left open and the top simply covered.

If Rhubarb is forced in this way considerable depth is necessary, and it is preferable to grow it under the stage in a warm house if space is available. It is not generally known that excellent forcing crowns of Rhubarb may be grown in one year, and I know of no better method of keeping up a supply of Rhubarb crowns than treating it as an annual, that is, raising it from seed, forcing it the first year, and then throwing the plants away. Very large sticks may not be produced in this way, but serviceable material can be, and large Rhubarb is not in demand in private establishments. *W. Auton.*

BATAVIAN ENDIVE.

WHILE it is often difficult to grow Lettuces successfully during the winter, a supply of Batavian Endive may be obtained easily, provided suitable plants are available in the garden. These should be lifted when the weather is dry and placed closely together in cold pits, taking care to retain a good ball of earth about the roots. After putting them in the frames they should be well-watered, and this will provide sufficient moisture for some time to come. Remove the lights on every favourable occasion in order to prevent damping, which is the chief thing the grower should be careful to guard against. *D.*

FRUIT REGISTER.

APPLE BALL'S PIPPIN.

THIS late dessert variety (see Fig. 179) is the result of a cross between Cox's Orange Pippin and Sturmer Pippin. The fruit is of a medium size suitable for dessert purposes, and keeps in season until so late as March. The skin is greenish-yellow with a considerable amount of red on the side next to the sun. The flesh is white, juicy, sweet and of good flavour. The introducer Mr. J. C. Allgrove, who obtained an Award of Merit for the variety at the Royal Horticultural Society's meeting on January 16, 1923, states that the tree is of fairly robust habit and a very free cropper. The variety being a comparatively new one has not been planted to any considerable extent, but it will doubtless be in demand, for such a good late dessert Apple will be very valuable to supplement the dessert fruits when they are very scarce. Some excellent fruits of this Apple were shown by Mr. Allgrove in September when we took the opportunity of securing the photograph from which the illustration is reproduced.

THE HIMALAYA BERRY.

A STRONG point in favour of the Himalaya Berry is that it succeeds in shaded positions, such as a border on the north side of a building. Gardeners often have difficulty in furnishing these situations with any subject of economic value. The Himalaya Berry provides an opportunity of doing so.

This *Rubus* should be planted in a fairly rich soil, and have their strong growths supported by stakes and thick wire.

The present is the best season in which to plant, because the soil is still warm and rich in available nitrates, making it possible for the roots to become established before winter.

Fruit is produced on one-year-old shoots as in the case of the Raspberry, and pruning should follow the method adopted for that fruit. No fruit will be borne for one year and nine months from planting, but afterwards the plants will bear annually for an indefinite period. The berries should not be gathered before they are dead ripe.

The Himalaya Berry is said to have been introduced into this country from Germany via America. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

Onions and Parsley.—I have not known Parsley to be transplanted amongst autumn-sown Onions, but in the midland counties a pinch of Parsley seed is often sown in the drills with spring sown Onions; allotment holders and market gardeners especially make a practice of doing this. Their reason is that it keeps the maggot away. As it is the exception rather than the rule to see a bad Onion bed in these districts, I think there is some value in the practice. How does the Onion fly distinguish an Onion bed from any other crop except by smell when it seeks to lay its eggs in May and June, and would not Parsley, or any other aromatic plant tend to neutralize the odour of the Onions when growing amongst them? I have grown excellent beds of Onions interspersed with Parsley, and also with rows of Broad Beans on either side. The latter are in full flower at the time the Onion fly is on the wing and their scent must overwhelm that of the Onions. The smell of a paraffin wash would have the same effect. I know

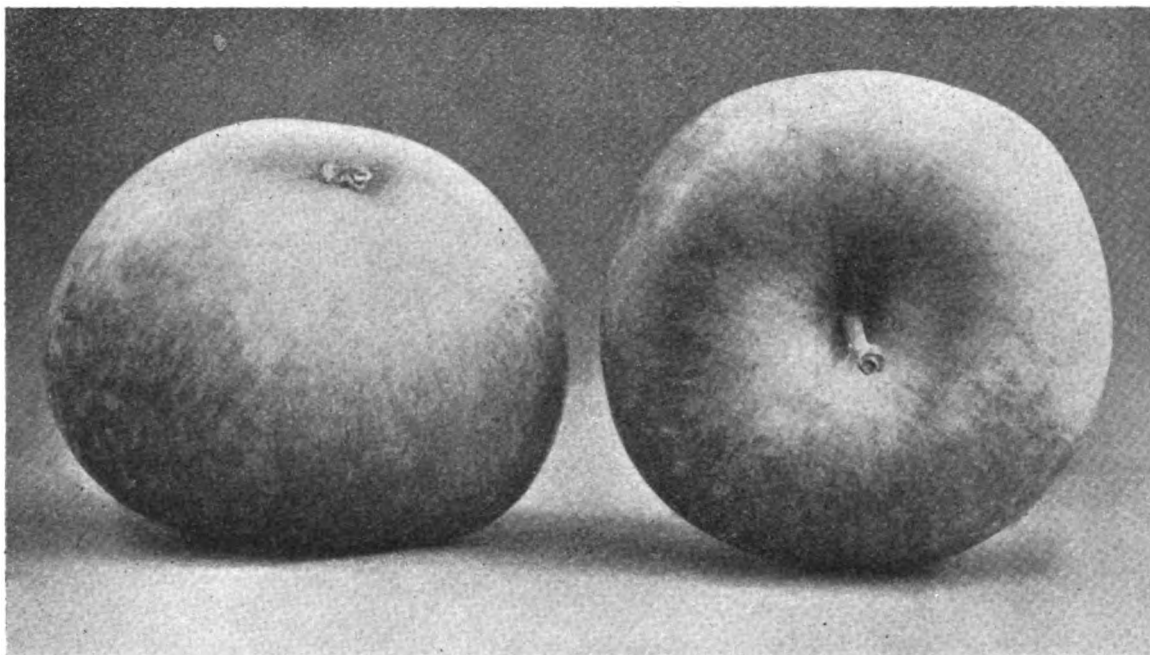


FIG. 179.—APPLE BALL'S PIPPIN.

APPLE BEN'S RED.

I AGREE with Mr. Weston (p. 392) that it would be interesting to have the opinions of other growers on the merits of this variety. It is by an exchange of views based upon experience that we learn our most valuable lessons.

I am not quite clear as to what Mr. Weston means by his statement that in Kent "I considered it rather a poor thing." Does he mean that it is of bad habit of growth, a shy bearer, or a variety of poor flavour? So far as the first two qualities are concerned it is all that could be desired over the whole of the county of Glamorgan; it makes a clean, shapely tree, and is a consistently good bearer. Flavour, I suppose, must always be a matter of personal opinion. I enjoy eating a fruit of Ben's Red: that is the reason why I commended the variety in my note on p. 316. I am pleased, also, to know that the judges at Vincent Square, who awarded first prize to a dish of Ben's Red, grown by Mr. Weston, agree with me as to its merits. *Geo. H. Copley, N.D.H.*

PEAR EMILE D'HEYST.

THIS is a very reliable variety, and the fruits are of excellent flavour. The tree succeeds equally well as a wall specimen, espalier or as an orchard tree; it thrives and bears most freely when worked on the Quince stock.

The fruits are large, tender and very rich, for they contain plenty of sugar and possess a fine aroma. This variety is in season during October and November, and here, in the west of England, it is one of the best of autumn Pears. The fruits are very distinct in shape, for in many cases they taper but very little towards the stalk, being almost of one thickness throughout; the leafage is very abundant and the individual leaf distinctly acuminate.

Bunyard states that this Pear was raised by Major Esperen and named after M. Emile Berckmans of Heyst-op-den-Berg, who settled in America and became a prominent pomologist in that country.

Those contemplating planting Pears this month may be recommended to include a tree or two of Emile d'Heyst. *Ralph E. Arnold.*

some good Onion growers who would never think of sowing Onion seed without Parsley seed, and they always secure good crops. They, themselves, do not know why, but I think it is a sound practice handed down though many generations. *R. Gardner, Heywood Gardens, Cobham, Surrey.*

Cactus Dahlias.—It is by no means rare to find plants of Cactus Dahlias growing in gardens which give very little display of colour because they hang their flowers downwards instead of keeping them erect. I think the practice of staging them on boards at the exhibitions is largely responsible for this, as visitors have no guide to the prevailing habit of the varieties. May I suggest to secretaries and committees of horticultural shows that exhibiting on boards be discontinued, and prizes offered for flowers in vases without wires or stakes. This plan is now becoming general at Chrysanthemum shows and makes a much better exhibition. There seems no good reason why it should not be applied to the Dahlia also; visitors would then have a chance to see if the flowers were naturally effective for garden decoration. *W. H. Divers, Westdean, Hook, Surbiton.*

SOCIETIES.

DUNFERMLINE HORTICULTURAL.

NOVEMBER 13 and 14.—The annual Chrysanthemum Show promoted by the Dunfermline Horticultural Society was a great success, and the number of entries constituted a record. In the gardeners' classes the exhibits numbered 257, an increase of 57, while the total in the amateurs' and allotment holders' sections came to 438, making 695 in all, of which over 200 represented Chrysanthemum exhibits.

Competition was keen in the latter classes, more particularly in those for Japanese blooms. Mr. JAMES MCKENNA, Donibristle Park, was the most successful competitor, gaining twelve first prizes for cut blooms, and he also won the Silver Challenge Trophy for the best six vases of decorative Chrysanthemums, an award which he secured two years ago. The Cup for the best three vases shown by amateurs and allotment holders was won by Mr. JAMES SUMMERS, Halbeath, the runner up being Mr. JOHN WILSON, Dunfermline, last year's winner. Other prominent prize winners in the competitions for cut flowers were: Mr. NEIL McLEAN, Fog Bank; Mr. THOMAS WRIGHT, Bennoch; Mr. G. WILSON, Corstorphine; Mr. T. HYND, Mr. T. BOWER, and Mr. J. WILSON, Dunfermline; Mr. W. ROBERTSON, Grantsbank, and Mr. R. L. MORRIS, Tounhill.

Mr. H. CUMMINGS, Blairhall; Mr. D. McMICHIE, Rumbling Bridge; Mr. J. LOAN, Coldstream; Mr. N. F. BOWIE, Kincardine; Mr. J. MCKENNA and Mr. WM. HUTTON, Dunfermline, were the leading prize winners for fruit.

There were fewer exhibits than usual in the vegetable section, and the principal prize winners were: Mr. G. HUTTON, Alloa; Mr. P. DONALDSON, Blackford; Mr. J. SMITH, Crawford Priory; Mr. W. L. SCORGIE, Blairhill; Mr. WM. REID, Dollarfield; Mr. J. A. JOHNSTONE, Keevil; Mr. J. LOAN; and Mr. J. MCKENNA.

Miss MARJORY BURT, Pittencreeff Gardens, secured chief honours for table decorations.

HITCHIN CHRYSANTHEMUM.

THE annual show of the Hitchin Chrysanthemum Society was held in the New Town Hall on Thursday, the 12th inst. It was a record show for this Society, both in the number of exhibits and the attendance. Chrysanthemums were the outstanding feature; fruit was also a strong section, and vegetables of a very high standard of merit were shown. The principal open class was for six vases of Japanese Chrysanthemums, three blooms of a variety in each vase. There were three competitors, and the Silver Challenge Cup was awarded to Sir CHARLES NALL-CAIN, Bart. (gr. Mr. T. Pateman), for fine specimens of Louisa Pockett, Julia, T. W. Pockett, Majestic, Princess Mary and Mrs. Algernon Davis. E. MARTIN SMITH, Esq. (gr. Mr. Miller), Codicote Lodge, Welwyn, was placed second; his best blooms were Louisa Pockett and Majestic. Mrs. HANSCOMBE (gr. Mr. Healy), was placed third.

For four Japanese varieties, distinct, three blooms in a vase, another Silver Cup was offered, and this was won outright by B. FRANKLIN, Esq., Stevenage, with splendid samples of Majestic, Julia and Princess Mary. For six Japanese blooms, distinct, Sir CHARLES NALL-CAIN was placed first, and Mrs. HANSCOMBE, second. The same prize-winners were also placed first and second for three blooms of a white variety, and Sir CHARLES again excelled in a class for three coloured blooms. In a class for six varieties of Single Chrysanthemums, six blooms in a vase, E. MARTIN SMITH, Esq., was placed first, Sir CHARLES NALL-CAIN being a very close second.

Carnations were well-shown; the first prize-winners in the two classes for these flowers were Sir HENRY WHITEHEAD, Stagenhoe Park, Welwyn (gr. Mr. Carter), and E. MARTIN SMITH,

Esq., respectively. For three vases of Japanese blooms, not fewer than six varieties, open to amateurs, B. FRANKLIN, Esq., was first, and for a vase of three Japanese blooms in one variety, Mr. W. G. P. CLARK excelled.

There were two classes for winter-flowering Begonias. In that for three plants of Begonia Gloire de Lorraine, Major FRANCIS, The Hoo, Kimpton (gr. Mr. Gillings), was easily first, and Sir HENRY WHITEHEAD, second. For three winter-flowering Begonias other than of the Lorraine type, Sir HENRY WHITEHEAD led with fine specimens of the variety Optima.

The Bronze Medal offered by *Gardening Illustrated* for the best Chrysanthemum bloom in the show was awarded to Sir CHARLES NALL-CAIN for a fine specimen of Louisa Pockett.

Fruits were finely shown, and the Challenge Cup for a collection of fruits was awarded to CARL HOLMES, Esq., The Node, Welwyn (gr. Mr. Goldsmith), Major FRANCIS being a close second. For six dishes of Apples, Mrs. HANSCOMBE was first, but in the class for three dishes of dessert Pears Sir CHARLES NALL-CAIN excelled. The last competitor was also first for black and white Grapes, while CARL HOLMES, Esq., was first for three dishes of culinary Pears.

In the special class provided by Messrs. J. Carter and Co., for a collection of nine kinds of vegetables, there were four competitors. Major HARRISON won the new Challenge Cup for the first time, with a fine display. Sir CHARLES NALL-CAIN was second, and CARL HOLMES, Esq., third. In Messrs. Sutton and Son's class Sir CHARLES NALL-CAIN was first, Major HARRISON, second, and E. MARTIN SMITH, Esq., third. The principal prize-winners in the single dish classes were Major HARRISON, E. MARTIN SMITH, Esq., and Sir CHARLES NALL-CAIN.

In the amateur classes the competition was good, and the produce of very high standard. Fruit was well-shown in a class for three cooking Apples. Mr. A. W. ANSELL won easily, and the same competitor was also first for three dishes of dessert Apples.

ROYAL HORTICULTURAL OF ABERDEEN.

THE annual meeting of the members of this Society was held in the Music Hall Buildings, Aberdeen, on the 21st inst. Sir Thomas Jaffrey, President, occupied the chair. The Secretary, Mr. T. Barclay Rennett, advocate, read the annual report, which commented very highly on the success of the annual show at Hazlehead, the most recently acquired public park by Aberdeen, which was held in August last. The income for the past year, which was considered most satisfactory, amounted to £678, and the expenditure to £645, leaving a surplus of £33. Sir Thomas, in moving the adoption of the report, said it was most gratifying that the fears expressed in so many quarters fears in which he did not participate, had proved groundless, and that it had now been established beyond a shadow of doubt that, of the many beauty spots in Aberdeen, Hazlehead was the place to hold their annual exhibition. He hoped their August show of this year would be the first of a long series of successful shows to be held at Hazlehead. Their success this year was specially noteworthy, keeping in mind that to popularise the event the prices of admission were reduced. Some expense was incurred in the support that their society, along with the principal horticultural societies in Scotland, gave to a proposal that the Royal Horticultural Society of London should institute in Scotland trial grounds for plants and flowers to be carried on under its auspices on similar lines to the present Royal Horticultural Society's trial grounds at Wisley. That proposal had been shelved meantime by the Royal Horticultural Society in respect that the financial support promised from Scotland was not sufficient to warrant going forward with the project at the present time. Mr. George Alexander, solicitor, seconded the adoption of the report, which was unanimously agreed to. Office-bearers were then elected. Lord Provost

Lewis, who entered upon his municipal reign this month as civic head of the city of Aberdeen, was appointed Hon. President, while ex-Lord Provost Meff, who has just demitted office, and Mr. C. M. Barclay-Harvey, M.P., were added to the list of Hon. Vice-Presidents.

The following officers were appointed:—Chairman, Sir Thomas Jaffrey; Vice-Chairman, Mr. William R. Anderson; acting directors, Messrs. William Henderson, George Tocher, Alexander Edwards, William Grant, John Davidson, George Wyllie, John Cameron and James Cook; auditors, Messrs. William Wyllie and William Allison. Mr. J. Barclay Rennett, advocate, was again elected secretary.

ROYAL HORTICULTURAL.

Trials of Perennial Asters.

THE following awards have been made to perennial Asters by the Royal Horticultural Society after trial at Wisley.

AWARDS OF MERIT.

(Amellus). *Friquet**, sent by Messrs. B. RUY, Dedenvaart; *Ruby**, sent by Mr. THOS. HEATON, Cheshunt; *Ideal**, sent by Messrs. B. RUY; *Superbust*†, sent by Messrs. BARR AND SONS.

HIGHLY COMMENDED.

*Perle Rose**, sent by Messrs. BARR AND SONS.

AWARDS OF MERIT.

(Thompsonii Type). *Robinsonii**, sent by Messrs. DICKSON AND ROBINSON, Manchester; *Frikarti*†, sent by Messrs. B. RUY.

(Ericoides). *Dorist*†, sent by Messrs. DICKSON AND ROBINSON; *Twilight*†, sent by Mr. H. J. JONES, Lewisham.

(Novi-Belgii). *Queen Elizabeth*† (flowers white), sent by Mr. E. BALLARD, The Court, Colwall, and Mr. H. J. JONES; *Aldenhams Pink*† (flowers pink), sent by Mr. E. BECKETT, Aldenhams House, Gardens; *Little Pink Lady*†, sent by Mr. E. BALLARD; *Semi-Plenus*†, sent by Mr. H. J. JONES; *Maid of Athens**, sent by Mr. E. BALLARD; *Margaret Ballard**, sent by Mr. E. BALLARD; *Nora Rogers*† (flower mauve), sent by Mr. H. J. JONES, and Messrs. BARR AND SONS; *October Dawn** (flowers pale blue), sent by Mr. E. BALLARD; *Freedom**, sent by Mr. E. BALLARD; *Queen Mary*†, sent by Mr. E. BECKETT; *Acme*† (flowers blue), sent by Mr. E. BECKETT and Mr. H. J. JONES; *Royal Blue**, sent by Mr. E. BALLARD.

HIGHLY COMMENDED.

Paper White†, sent by Messrs. KELWAY AND SON, Langport; *Northern Glory*†, sent by Messrs. DICKSON AND ROBINSON; *Delicata*†, sent by Mr. H. J. JONES; *Maggie Perry**, sent by Mr. H. J. JONES; *Mrs. Pierpont Morgan*† sent by Mr. E. BECKETT; *Wedgewood*† (name to be altered), sent by Mr. E. BECKETT; *Purple Robet*†, sent by Mr. H. J. JONES.

AWARDS OF MERIT.

(Novae Angliae). *Barr's Pink**, sent by Messrs. BARR AND SONS; *Crimson Beauty*†, sent by Messrs. BARR AND SONS.

AYR CHRYSANTHEMUM.

THE nineteenth annual show of this society was held on November 18, and owing to the increase of entries additional accommodation had to be provided for the pot plants in an adjoining hall. In every respect the exhibition was a great advance on those promoted since the termination of the war.

In the gardeners' section, Mr. ROBERT T. CLARK, Ayr, was the most successful competitor in the classes for pot plants. He won the Glenfaim Cup with large and floriferous examples of Lady Hanham, and also excelled in the class for one pot of any variety with Vivian Morel, while his plant of Florrie King was the best

*Award recommended September 28, 1925.

†Award recommended October 15, 1925.

‡Award recommended August 31, 1925.

of the single varieties. His other honours included firsts for a single pot of *H. W. Thorpe*, and a vase of *Chrysanthemums* arranged for effect.

This fine record, however, was excelled by Mr. R. H. ALLAN, Whiting Bay, Arran, in the cut flower section. In an entry of eight he was placed first in the premier competition for four vases of three blooms each which carried with it the Land of Burns Chrysanthemum Cup. His best blooms were Mrs. R. C. Pulling, Mrs. M. Sargent, Miss A. E. Roope, Francis Rowe, and W. Turner. He also led in the "white" class with a vase of M. Turner, and in the "yellow" class with Mrs. Pulling, while the vase containing well-grown specimens of Pink Turner, Queen Mary, W. Turner and Mrs. Pulling was not only judged to be the best in its class but the last-named variety received the special distinction of a Gold Medal that was awarded to the best bloom in the show. Mr. ALLAN also staged the best twelve blooms on boards, and, further, won the prize for six buttonhole bouquets.

Among the other prize-winners in the gardeners' classes were Messrs. DAVID AIRDRIE, Dunlop; Mr. R. MACDONALD, Hamilton; Mr. GEORGE MCCARTNEY, Orangefield Gardens, Monkton; Mr. ANDREW NOBLE, Corsehill; and Mr. ROBERT RAE, Ayr.

Mr. J. W. KERR secured the Amateur Cup in the cut flower classes, while Miss CARNEGIE, Belmont Nursery, was placed first for a hand bouquet also for a table decoration.

An Award of Merit was bestowed on a choice collection of Apples shown by Messrs. LEARMONT, HUNTER AND KING, Dumfries, and a similar distinction was extended to Mr. WILLIAM RAE, Heathfield Nursery, who exhibited a grand collection of Chrysanthemums, which included a plant of *H. W. Thorpe* with over eighty blooms, and a new red decorative variety named *Fernandez*.

GUILDFORD AND DISTRICT GARDENERS'.

THE first of a series of lectures arranged by the above association was given at the meeting held on the 10th inst., when Mr. Joseph Cheal gave an address on "The Modern Dahlia."

The President, Alderman W. T. Patrick, introduced the lecturer. The many types of the flower were all dealt with by Mr. Cheal. As the various types were mentioned lantern slides were shown, these adding greatly to the interest of the lecturer's remarks.

LANCASTER CHRYSANTHEMUM.

THE Lancaster show was held in the Ashton Hall on the 11th inst., and was an improvement on the previous one. The opening ceremony was performed by the new Mayor (Mr. H. Roberts), who was supported by the Mayoress and Sir Norval and Lady Helme.

A splendid non-competitive group, staged by the Corporation Parks Gardener, Mr. J. DEARDEN, occupied a central position and was much the largest contribution to the show. Two other admirable groups were staged by Sir NORVAL HELME (gr. Mr. T. Atkinson), and Mr. F. SMITH, the former again securing Lord Ashton's Silver Cup with a collection of uniformly fine Chrysanthemums. In the classes for eighteen and twelve Japanese blooms there was no entry, and the Lady Storey Rose Bowl was not awarded. Snelson and Waters' Cup for three vases, distinct, was won by Dr. E. S. JACKSON with good specimens.

For Alderman I. J. Curwen's Cup for amateurs, allotment holders and cottagers, three exhibitors tied with thirteen points each, and the cup was awarded to the lady, Miss BRIGHOUSE.

Sir NORVAL HELME's four exhibits obtained four first prizes. Mr. J. WINDER was most successful in the sections for plants, besides taking many prizes for cut blooms; Mr. E. BOARDLEY won several awards in the latter section. Dr. E. S. JACKSON was an outstanding exhibitor of fruit, and Mr. W. ROBINSON was head and shoulders above all others for vegetables. The exhibits of fruit and vegetables were splendid. Mrs. E. SHARPE, of Halton Hall, showed three

fine plants of *Begonia Gloire de Lorraine*. The awards for a table decoration caused great dissatisfaction. Mrs. EMMOTT won first prize for an epergne of Chrysanthemums.

BIRMINGHAM CHRYSANTHEMUM.

NOVEMBER 17, 18 and 19.—The sixty-first annual show, held in the great Bingley Hall, Birmingham, was not only the largest but the best and most representative show held by this society since the war. The Hall, which has no claim to architectural beauty or design, is, although cold, well-adapted for great exhibitions, as it affords ample room for the arrangement of exhibits and the free movement of visitors. It is very encouraging to the Committee to know that the class for thirty-six Japanese Chrysanthemums was such a pronounced success. The plant groups of Chrysanthemums were well up to the average, while cut blooms in the open and amateur classes have rarely been equalled. Apples were splendidly shown, but Pears were very poor, and vegetables have been seen in greater numbers and better quality. Honorary exhibits of fruits, vegetables, flowers, shrubs, etc., added much to the attractiveness of the show.

GROUPS.

There were three entries in the class for a group of Chrysanthemums, as grown, on a space of fifteen feet by six feet. Any variety was allowed while Ferns and foliage plants—but not *Codiaeums*—could be introduced for effect. The first prize was awarded to a well-known local supporter of the Society, J. A. KENRICK, Esq., Berrow Court, Edgbaston (gr. Mr. A. Cryer), whose group included a large number of yellow-flowered Japanese varieties, and a fair sprinkling of decorative and single forms. *Bambusa Fortunei variegata* formed a pretty edging to a meritorious group. In the second prize group which came from Sir GEORGE H. KENRICK, Whetstone, Edgbaston (gr. Mr. J. V. Macdonald), we noted a good selection of varieties, but the flowers were smaller than those in the first-named collection; third, Mrs. NELSON HOMER, Rugby (gr. Mr. W. Boyce).

The undermentioned three classes were for specimen plants, viz.: (1) six decorative Japanese varieties (singles not allowed); (2) six single-flowered varieties, disbudded; and (3) three decorative varieties, disbudding allowed. The only exhibitor in these classes was Col. A. J. PARKES, Edgbaston (gr. Mr. L. T. Hochkins), whose plants of *Freda Bedford*, *Rayonnante*, *Black Hawk*, *W. Staward*, and *Market Red* in the first class; *Florrie King*, *Robert Milner* and *Winifred Parry* in the second class; and *H. W. Thorpe* and *Romance* in the third class, were very large, healthy, and profusely flowered.

CUT BLOOMS.

Mr. H. WOOLMAN, Shirley, Birmingham, and Messrs. HEWITT & Co., Solihull, Birmingham, were the only exhibitors in the class for single Chrysanthemums arranged on separate tables of ten feet by five feet. Cut foliage and foliage plants were admissible and any kind of vase could be used, also tiered staging at the exhibitors' discretion. The first-named firm secured the leading prize with a magnificent set of seventeen varieties, beautifully displayed in large, loose bunches. Bold examples of Mrs. W. J. Godfrey marked the centre of the group; other outstanding varieties were Mrs. T. Hancock (pale apricot), Mrs. J. W. Stones (yellow), Mrs. F. Brill (rose, suffused with white), Mrs. Harry Woolman (orange), *Nona* (white), *Fantasy* (orange), *Achievement* (deep crimson), *Phyllis Cooper* and *Gorgeous*. Messrs. HEWITT's group, which was very bright and fresh but rather flat, included excellent examples of Mrs. W. J. Godfrey, *Catrina* and *Portia*.

In the leading cut bloom class, thirty-six Japanese blooms were required in not fewer than eighteen varieties, one bloom in a vase and each of the eight exhibits occupied a table twelve feet long. The 288 big Japanese blooms proved to be the great feature of the show,

and produced a splendid effect, especially when viewed from the galleries. Of such high merit were the flowers that the judges recommended two additional awards. The first prize of £15, which carried with it a Silver Shield, the latter to be held for one year, was won by the DOWAGER LADY ANNALY, Northampton (gr. Mr. D. Cameron), who staged superb examples of Mrs. Algernon Davis, Shirley Golden, James Stredwick, Mrs. B. Carpenter, Mrs. Peter Murray, Majestic, Mrs. R. C. Pulling, Mrs. George Monro, junr., Queen Mary, Norman Chittenden, Princess Mary and Mrs. G. Drabble; second, W. H. ALLEN, Esq., Bedford (gr. Mr. H. Blakeway), whose best flowers were Mrs. B. Carpenter, Princess Mary, Queen Mary, Mrs. Sargent, Mrs. Algernon Davis, Mrs. George Monro, junr., Mrs. Charles Fox, Mrs. G. Drabble, Majestic and Mrs. R. C. Pulling; third, HUGH ANDREWS, Esq., Toddington Manor, Winchcombe (gr. Mr. J. R. Tooley), who showed good flowers of Mrs. B. Carpenter, Edith Cavell, Mrs. R. C. Pulling, W. Rigby and General Pétain; fourth, HENRY BALFOUR, Esq., Langley Lodge, Oxford (gr. Mr. A. E. Hewlett), with remarkably good flowers of Mrs. George Monro, junr., and Princess Mary; fifth, Sir WILLIAM BASS, Bart., Burton-on-Trent (gr. Mr. W. E. House).

For nine vases of Japanese Chrysanthemums, one bloom in a vase, there were seven first-rate entries. First, HENRY BALFOUR, Esq., who had very big specimens of Princess Mary Majestic and W. Rigby; second, The DOWAGER LADY ANNALY, Northampton, with Mrs. B. Carpenter (extra good colour), Mrs. George Monro, junr., and Majestic; third, Major HARCOURT WEBB, Bewdley (gr. Mr. W. Gaiger), whose best bloom was Mrs. R. C. Pulling.

In a class for twelve vases of Japanese Chrysanthemums representing at least nine varieties, arranged with foliage on separate tables, six feet by three feet, Mrs. GUTHRIE, Northampton, (gr. Mr. P. Barr), took the lead with beautifully fresh, good-sized, nicely set up flowers of Mrs. George Monro, junr., Mrs. Algernon Davis, Mrs. R. C. Pulling, Majestic, W. Rigby and W. Turner, relieved with foliage of *Berberis*, *Abutilon* and *Asparagus Sprengeri*; second G. L. WALLER, Esq., Finstall Park, Bromsgrove (gr. Mr. E. Avery), who showed beautifully clean flowers of W. Turner, Francis Jolliffe, Frank Ladds and Princess Mary, over a dense carpet of *Nephrolepis*, *Pteris* and *Asparagus*; third, Mrs. WAKEMAN, Newport, Bewdley.

The winning exhibit of three vases of a pink coloured Japanese Chrysanthemum came from W. H. ALLEN, Esq. (gr. Mr. H. Blakeway), who had extraordinarily good specimens of Mrs. B. Carpenter; second, Mrs. GUTHRIE who exhibited shapely blooms of Mrs. Algernon Davis; third, Mr. J. B. JENKINS, Berkswell, also with Mrs. Algernon Davis. The leading three vases of a crimson-coloured Japanese variety was exhibited by HENRY BALFOUR, Esq. (gr. Mr. A. E. Hewlett), whose flowers of Mrs. George Monro, junr., were very large, well-finished and of intense colour. HUGH ANDREWS, Esq. (gr. Mr. J. R. Tooley), and W. H. ALLEN, Esq. (gr. Mr. H. Blakeway), were placed second and third respectively each showing blooms of Mrs. George Monro, junr.

In the class for three vases of a white Japanese variety, Mr. E. VENN, Coventry, was awarded first prize for good blooms of *Victory*; second, Major HARCOURT WEBB (gr. Mr. W. Gaiger), with handsome specimens of *Louisa Pockett*. A good deal of discussion followed the awarding of these prizes, the general opinion being that the positions should have been reversed: third, W. H. ALLEN, Esq. (gr. Mr. H. Blakeway), with excellent examples of Mrs. Drabble. Of the dozen entries in the class for three vases of a yellow Japanese variety HENRY BALFOUR, Esq., led with huge, well-finished blooms of Princess Mary; second, the DOWAGER LADY ANNALY, with richly-coloured specimens of Shirley Golden; third, W. H. ALLEN, Esq., who showed

Mrs. R. C. Pulling in excellent condition. The winning three vases of any colour other than those mentioned above were sent by Mrs. GUTHRIE (gr. Mr. P. Barr), who showed uncommonly good specimens of Dawn of Day; second, HENRY BALFOUR, Esq., with Majestic; third, W. H. ALLEN, Esq., also with Majestic.

The best half-dozen vases of distinct varieties of single Chrysanthemums were staged by Messrs. HEWITT and Co. Their vases of Mrs. W. J. Godfrey, Mrs. T. Hancock and Mrs. A. B. Hood were of outstanding merit. Mrs. GUTHRIE was a very close second; her flowers of Mrs. R. Harris, Mrs. W. J. Godfrey and Robert Collins were very beautiful. In the next class, which was for six vases of decorative Chrysanthemums, Messrs. HEWITT and Co. were again to the fore, showing In Memoriam, Gloriosa and Felicia in splendid condition; second, Mr. E. J. KEELING, Small Heath. The best vase of nine Single Chrysanthemums was shown by Mrs. GUTHRIE, who had particularly large, well-coloured blooms of Edith Dimond; second, Messrs. H. AUSTIN and SON, Aberystwyth, also with Edith Dimond; third, J. A. KENRICK, Esq.

LOCAL CLASSES (open).

Competition was very strong in certain local classes, while entries were few in others. The most successful exhibitors were H. F. KELP, Esq. (gr. Mr. T. W. Davis), who won first prizes in classes for (1) two vases of Japanese Chrysanthemums, three blooms of each variety; (2), four vases of incurved Chrysanthemums in twelve varieties; (3), two vases of incurved Chrysanthemums in two varieties three blooms in a vase, and (4), four vases of twelve Japanese varieties. J. W. MOORE, Esq. King's Norton (gr. Mr. F. Moorman), was first with twelve Japanese varieties grown within ten miles of Birmingham, and Mr. THOMAS BLOWER, Perry Barr, excelled in the class for two vases of Japanese varieties from within five miles of Birmingham. H. F. KELP, Esq. (gr. Mr. T. W. Davis), was second in each of the two last named classes.

AMATEURS' CLASSES.

Competition in the seven classes reserved for amateurs was most encouraging, and many flowers of great excellence were noted. The undermentioned exhibitors were first prize winners, viz., J. A. KENRICK, Esq., Mr. E. J. KEELING, Mr. THOMAS BLOWER and Mr. A. GROVE.

TABLE DECORATIONS.

The two decorated table classes are always well-supported at Birmingham, and the interest shown in them this year was as keen as usual. In the class in which flowers are restricted to Chrysanthemums, Mr. E. WINCHESTER, Rubery, won first prize with an artistic arrangement of single and orange coloured decorative varieties, in silvered rustic stands, relieved with sprays of Selaginella; second, Mr. A. D. SHIPTON, Birmingham, who used yellow and crimson varieties with foliage of Codium and Nandina domestica; third, Sir GEORGE H. KENRICK; fourth, Mr. E. H. HOLDER, Erdington.

In the second class, in which flowers other than Chrysanthemums were admissible, Sir GEORGE H. KENRICK was awarded first prize for a most pleasing arrangement of Orchids and pink Chrysanthemums draped with Selaginella and Pellionia daveauana; second, Mr. E. COLLETT, Handsworth, who relied upon crimson and yellow Chrysanthemums, Cypripediums, Selaginella and Asparagus; third, Mr. E. WINCHESTER, Rubery; fourth, Mr. W. H. REYNOLDS, Tettenhall. A protest was made against the first and second prize winners on the ground that vases only were used, whereas the schedule required "bowls and vases."

SPECIAL PRIZES.

Special prizes were offered by Mr. H. Woolman, Shirley, in the three following classes: For nine Japanese Chrysanthemums in not fewer than six varieties. Of the seven contestants, Mr. H. H. TOMLINSON, Derby, led with attractive specimens, the pick of the lot being Majestic, Victory, Dawn of Day, F. Slack and Mrs.

Rupert Wilks; second, Mr. THOMAS BLOWER, whose best flowers were Mrs. Alzernon Davis and Shirley Golden; third, Mr. W. J. WAKEFIELD, Harbourne. Mr. H. H. TOMLINSON also won first prize in a class for six Japanese blooms exhibited on boards; second, Mr. JOHN ALLEN, Old Hill.

The best four vases of Japanese varieties, three blooms of each variety, were contributed by Mrs. GUTHRIE; second, H. F. KELP, Esq. (gr. Mr. T. W. Davis).

CERTIFICATE OF MERIT.

To Single Chrysanthemum Mrs. Mary Guthrie. Flowers very large, florets broad, rich crimson. Exhibited by Mrs. GUTHRIE, Northampton (gr. Mr. P. Barr).

MISCELLANEOUS PLANTS AND FLOWERS.

HUGH ANDREWS, Esq., was the only exhibitor of Perpetual Carnations, and he was deservedly awarded first prize for six vases of bright, clean, well set up flowers. The two classes for Begonia Gloire de Lorraine, viz., for twelve and for six plants respectively, made a brilliant show, there being seventy-eight plants in the two classes. Col. A. J. PARKES (gr. Mr. J. T. Hochkins), excelled in the first with large, pyramidal, well-flowered plants; second, the Rt. Hon. NEVILLE CHAMBERLAIN, M.P., Edgbaston (gr. Mr. P. G. Catt), with smaller but well-flowered specimens; third, J. A. KENRICK, Esq. In the smaller class EDWARD ANSELL, Esq., Sutton Coldfield (gr. Mr. A. Jeffs), beat Col. A. J. PARKES who was placed second, and The Rt. Hon. NEVILLE CHAMBERLAIN third.

G. L. WALLER, Esq. (gr. Mr. E. Avery), showed the best dozen Cyclamens. Capt. C. F. FARLEY, Barford (gr. Mr. L. W. Bass), being second, and J. A. KENRICK, Esq., third. In the class for six Cyclamens, Col. C. F. FARLEY beat J. A. KENRICK, Esq., and the Rt. Hon. NEVILLE CHAMBERLAIN, M.P., who were placed second and third respectively.

J. A. KENRICK, Esq., won first prizes for (1) one Palm; (2) three Palms; (3) twelve pots of scarlet Salvias, and (4) six Primula obconica. Mr. J. W. MOORE, of King's Norton, was second in each of the two last-named classes, and first for (1) six Primula sinensis, and (2) six single-flowered Zonal Pelargoniums.

FRUIT.

HUGH ANDREWS, Esq., Toddington Manor, Winchcombe (gr. Mr. J. R. Tooley), was supreme in the class for a collection of British, grown fruit on a table space of fourteen feet by four feet. Included in his fine exhibit were Muscat of Alexandria, Mrs. Pince, Alicante, and Black Hamburg Grapes; Blenheim Pippin, Peasgood's Nonesuch, Allington Pippin, Emperor Alexander, Charles Ross, Edward VII, Cox's Orange Pippin, Gascoigne's Scarlet and Rev. W. Wilks Apples; Beurré Diel, Josephine de Malines and Glou Morceau Pears; Sea Eagle Peaches, Quinces, Crabs, Medlars and Nuts. The same exhibitor won first prize for single dishes of Apples, viz., Bismarck (well-coloured), Bramley's Seedling, Cox's Pomona (very big and beautifully coloured), Gascoigne's Scarlet (extra good), King of the Pippins, Lord Derby (very big, heavy fruits), Newton Wonder, Peasgood's Nonesuch, Warner's King and Rev. W. Wilks.

Mr. C. W. POWELL, Warham, Hereford, excelled with Allington Pippin, Annie Elizabeth, Blenheim Pippin, Charles Ross, Emperor Alexander, The Houblon, James Grieve, Lane's Prince Albert and The Queen.

Pears were very poor, there being only one first prize awarded which went to the STUDLEY HORTICULTURAL COLLEGE for Doyenné du Comice. The best three bunches of black Grapes came from HUGH ANDREWS, Esq., who showed medium-sized, well-finished examples of Gros Colmar; second, J. A. KENRICK, Esq. HUGH ANDREWS, Esq., was again placed first for three splendid bunches of Muscat of Alexandria Grapes; second, Mrs. T. S. HALL, Chard (gr. Mr. J. Richardson).

In classes for (1) culinary Apples, and (2) dessert Apples, HUGH ANDREWS, Esq., Mr.

C. W. POWELL and Mrs. T. S. HALL (gr. Mr. G. Richardson), were placed first, second and third respectively. J. A. KENRICK, Esq., was awarded first prize for two bunches of black Grapes in a class reserved for local growers, and in another local class Mr. E. J. KEELING had the best two dishes of culinary Apples, followed by Mr. C. G. COMPTON, Bournville, and The Rt. Hon. NEVILLE CHAMBERLAIN, M.P., for second and third places respectively.

VEGETABLES.

For a collection of six varieties of Potatoes seven splendid entries were placed before the judges, who awarded first prize to HUGH ANDREWS, Esq., for clean, regular tubers of Arran Comrade, K. of K., Katie Glover, Catrona, King Edward and The Bishop; second, The Bishop of Worcester, Hartlebury Castle, Worcester (gr. Mr. A. Fletcher), whose best dishes were Arran Comrade, King Edward and Majestic; third, Mr. S. G. FATHERS, King's Heath, Birmingham. The last-named exhibitor excelled in classes for (1) red pickling Cabbages; (2) yellow Shallots, and (3) red Shallots. Major HARCOURT WEBB (gr. Mr. W. Gaiger), had the best (1) nine Onions (very solid bulbs); (2) six long Beet and (3) six Parsnips. The Bishop of Worcester won first prizes for (1) six Carrots, and (2) three Savoy Cabbages. Mr. E. WINCHESTER, was placed first for three Cabbages, and Mr. A. HAYNES, Hartlebury, had the best six round Beet. Mrs. ANDREW COATS, Melton Mowbray (gr. Mr. W. Staward), contributed the best Brussels Sprouts, Leeks and Kidney Potatoes.

The winning exhibit of six kinds of vegetables open only to allotment holders and members of allotment associations, was sent by Mr. W. PERKS, Lye. He had excellent Leeks, Onions and Parsnips; second, Mr. A. HAYNES; third, Mr. E. HEMMING, Hartlebury. Special prizes were offered by Messrs. Sutton and Sons for nine kinds of vegetables: first, Mr. E. WINCHESTER, second, Mr. ANDREW COATS. Messrs. Webb and Sons' prizes were for six kinds of vegetables and these were won by Mr. E. WINCHESTER, Mr. W. PERKS and Mr. F. HUDMAN, Great Barr, in the order named.

Messrs. Dickson and Robinson offered prizes for nine Premier Onions: first, Col. HEYWOOD LONSDALE; second, Mrs. A. COATS; third, Mr. C. G. COMPTON, Bournville. Mr. S. H. FATHERS, of King's Heath, won the first prize for eight kinds of vegetables offered by Messrs. Clibrans.

HONORARY EXHIBITS.

Large Gold Medals were awarded to Mr. H. WOOLMAN, Shirley, Birmingham, for Chrysanthemums; Messrs. WATERER, SONS and CRISP, Bagshot, for hardy shrubs; Messrs. HEWITT and Co., Solihull, for hardy shrubs and Chrysanthemums; STUDLEY HORTICULTURAL COLLEGE Warwickshire, for hardy fruits; Messrs. E. WEBB and SONS, Stourbridge, for vegetables and Chrysanthemums; Mr. C. W. POWELL, Warham, Hereford, for Apples; Messrs. GUNN and SONS, Olton, for gathered fruits, Chrysanthemums, Roses and fruit trees; and to Mr. J. COCK, Spalding, for Potatoes.

Small Gold Medals were awarded to Mr. W. J. GODFREY, Exmouth, for Chrysanthemums; and to the KING'S ACRE NURSERIES, Hereford, for fruits.

Silver-Gilt Medals were awarded to Messrs. BAKERS, Wolverhampton, for hardy shrubs; Messrs. HORWOOD and SONS, Cheltenham, for fruits and Chrysanthemums; THE FOREST and ORCHARD CO., Falfield, for Apples, Pears and shrubs; BOURNEVILLE VILLAGE TRUST, Bournville, for Apples and Chrysanthemums; Messrs. KENT and BRYDON, Darlington, for fruits, Potatoes and Begonias; and to Messrs. J. and W. E. GREEN, Cradley, for Chrysanthemums.

Silver Medals were awarded to Messrs. J. P. HARVEY and Co., Kidderminster, for Brussels Sprouts; Mr. BARRATT, King's Norton, for Apples and Chrysanthemums; GARDEN SUPPLIES, Liverpool, for Potatoes and Sundries; Messrs. LEGG, King's Heath, for Heaths etc.

NATIONAL DAHLIA.

THE annual meeting of the National Dahlia Society was held in the Lecture Room of the Royal Horticultural Hall, Vincent Square, Westminster, on the 17th inst. Mr. Joseph Cheal presided and some twenty of the members were present. The proceedings opened by the Chairman presenting the Dear Memorial Gold Medal to Mr. John Green in recognition of his valuable services to the society, and especially for his work as treasurer over a considerable number of years. The chairman stated that the president, Mr. Cory, was unable to attend as he was engaged at another meeting.

Mr. Cheal then asked the Hon. Secretary Mr. W. J. Chittenden, to read the annual report of the Committee and balance sheet. The following are extracts from the report:—

IN presenting their Annual Report and Balance Sheet, your Committee have much pleasure in recording that the past season has been a most satisfactory one for the Dahlia. The drought at the beginning of June threatened to delay the plants coming into bloom, but the subsequent rains remedied this in all but a few cases, and the plants made a splendid display throughout the summer and well into autumn. In the public parks the Dahlia has won general admiration and established its reputation as the most decorative flower for the border and for cutting from July to October. The Annual Show, held on September 9, in the Royal Horticultural Hall, was admitted to be the finest for many years. The amateur classes, in particular, were well-contested, and there was a large attendance of the general public. The *Dahlia Year Book* which was revived this year, has been well-received, and has strengthened the Society's position considerably. Thanks to the generosity of our President, Mr. Reginald Cory, we were able to enrich it with two illustrations in colour. The trial of new varieties has been carried out as wisely, and has been of great service in revealing those best suited for garden decoration. In judging them, the joint-committee have kept a high standard before them, and have recommended none that did not show an improvement on older varieties. The prospects for the future of the N.D.S. are bright, and if all who love the Dahlia will do their part, its usefulness will be greatly increased. Its financial position is satisfactory, but with a larger membership more advantages can be given to members. In April, the President of the American Dahlia Society, Mr. Richard Vincent, junr., paid a visit to London, and our President, with the Chairman of Committee and the Secretary, had the pleasure of welcoming him on behalf of the Society. Subsequently, during the Chelsea show, it was learned that Mr. Vincent was again in England, and as many members of your Committee as could be got together at short notice entertained him and Mr. T. de la Mare to dinner at the Holborn Restaurant. Finally, the Committee desire to thank the President and all subscribers for the generous support given during the year; and would express their gratitude to the horticultural Press for the valued help and publicity they have afforded.

Mr. Chittenden gave some details of the balance sheet, which showed that the income for the past year amounted to £233 4s. 2d., and the expenditure to £145 16s. 6d. The chief items on the credit side were a balance of £33 18s. 8d. from 1924; subscriptions, £99 0s. 1d.; advertisements, £27 2s. 6d.; special prizes, £13 18s. 0d.; special donations to the *Year Book*, £11 1s. 0d.; and money taken at the show, £17 3s. 6d. Of the expenses, the principal items were prizes, £56; printing and stationery, £60 4s. 8d.; hire of hall and committee rooms, £7 17s. 6d.; postage, £8 8s. 5d. The assets include a deposit of £50 at the bank, cash at the bank, £37 7s. 8d., and deposit on the hall for the 1926 show, 10/-. The liabilities only amount to £8, so that there remains a balance of assets over liabilities of £79 7s. 8d.

Mr. Cheal, in proposing the adoption of the report and balance sheet, stated that it was the most satisfactory report and balance sheet the Society had been able to issue for many years. The thanks of all the members were due to the hon. secretary for the great part he had taken in bringing about such a desirable state of affairs. The prospects, he said, augur well for the future of the Dahlia Society. The adoption of the report was seconded by Mr. John Green, and after a suggestion by Mr. Riding that the items for printing the *Year Book* and the Schedule should be shown separately in the balance sheet, both the report and balance sheet were carried unanimously.

The meeting then proceeded to the election of officers. Mr. Reginald Cory was re-elected president; the vice-presidents were re-elected, and Mr. Doncaster's name added to the list. The committee were also reappointed, Mr. Lucking being appointed to fill a vacancy. Several of the vice-presidents also being members of the committee, the question was raised as to whether the vice-presidents, being entitled

to act on the committee ex-officio, their names should be removed from the committee and appear as vice-presidents only. On reference to the by-laws and rules it was found that there were some ambiguities, and it was decided to appoint a committee of five to revise the by-laws, and to present a report on the same at the next annual general meeting.

A member proposed that the committee should have power to add to their numbers, but this was not agreed to. Mr. J. Cheal was re-appointed chairman of committee, and Mr. Emberson re-elected show superintendent. In proposing the re-election of Mr. W. J. Chittenden as hon. secretary, Mr. Cheal said that no one could have filled the office better. Mr. Chittenden was reappointed hon. secretary with acclamation, and Mr. W. E. Chittenden, his son, appointed as assistant-secretary. Mr. D. B. Crane was re-elected hon. treasurer, and Mr. Braddon, hon. auditor.

The following addition was made to by-law No. 3: "The Committee may, in their discretion, elect as honorary members foreign Dahlia experts whom it is especially desired to honour."

The meeting concluded by voting an honourarium of fifteen guineas to the hon. secretary, and it was obvious from the warm reception afforded Mr. Chittenden that his efforts on behalf of the Society were fully recognised by all present.

BARROW CHRYSANTHEMUM.

THIS show was the fifth, and was held in the Y.M.C.A. Hall, there being a record entry, and the best display yet seen. The Mayoress (Mrs. Ellison) opened the show, and the Mayor (Alderman Ellison) made the suggestion of extending the period to two days.

The championship in the open section was won by Mr. H. W. CHRISTIAN, who also took the award for the premier bloom with Mrs. B. Carpenter. The Silver Cup for amateurs was won by Mr. E. OXLEY, whose best bloom was Princess Mary. The Hon. Secretary, Mr. H. HERDMAN, won most points in the amateur section and secured the vase prize for the fifth year in succession. The next most successful exhibitor was Mr. J. MUDDIMAN, who took the chief awards in all the open plant classes, whilst Captain FISHER was a good third. Mrs. EMMOTT, Lancaster, led for a table decoration, and Mrs. W. H. CHRISTIAN had the best bowl of Chrysanthemums.

Fruits and vegetables were very good, Mr. ROBINSON'S Onions being of exceptional size. A novice section catered for new comers.

SPALDING FRUIT SHOW.

THE Spalding and District Bulb Growers' and Market Gardeners' Association held its annual fruit show at Spalding at the end of the past week.

The judge, Mr. J. Turnbull, of the Ministry of Agriculture, stated that although the quality of the exhibits was good, they were lacking, generally in size.

The Association's Challenge Cup for the best tray of culinary Apples went to Messrs. B. N. and C. E. SMITH, of Spalding. Other prize winners were Messrs. G. and A. ELSOM, of Spalding; Mr. J. HAMMOND, Whaplode, Holbeach; and Messrs. MASTIN and WHITE, Spalding and Holbeach.

ROYAL CALEDONIAN HORTICULTURAL.

THE ordinary monthly meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on November 3, Mr. Robert Fife presiding. A paper on "Vegetative Sports" was read by Mr. G. M. Taylor, Edinburgh.

The exhibits were:—Chrysanthemums, from the EDINBURGH PUBLIC PARKS DEPARTMENT, per Mr. Jeffrey (awarded a Gold Medal); Victoria Kale, from Messrs. DOBBIE AND CO.,

LTD., Edinburgh (awarded a Silver Medal); Chrysanthemums and Gloxinias, from Messrs. DOBBIE AND CO., LTD. (awarded a Cultural Certificate); Aster Climax, from Mr. DAVID ARMSTRONG, The Drum, Edinburgh, and Water Melon, from Mr. CHARLES WEBSTER, Gordon Castle, Fochabers.

MANCHESTER AND NORTH OF ENGLAND ORCHID.

FRIDAY, NOVEMBER 6.—*Committee present*: R. Ashworth, Esq. (in the chair), Messrs. A. Burns, C. Branch, A. Coningsby, J. Cypher, A. G. Ellwood, J. Evans, E. W. Thompson and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Cypripedium Baron Opoix (*The Baron* × *Germain Opoix*).—A large, well-set flower of reddish-brown colour; the large, dorsal sepal is beautifully lined; *Cypripedium Baron Renfrew* (*Royal George* × *Gaston Bullet*).—A flower of almost solid reddish-brown colour; the round, dorsal sepal is over three inches across. Both from S. GRATRUX, Esq.

Odontoglossum Bonar Law (*nitidum* × *amabile splendens*).—A well-shaped flower four-and-a-half inches across, with fimbriated sepals and petals, the white ground beautifully marked with heliotrope shading. From Mrs. P. SMITH.

Oncidium varicosum Rogersii, Adamson's variety.—A fine variety of an old species. From J. B. ADAMSON, Esq.

AWARDS OF MERIT.

Laelia praestans Amesiana and *Cypripedium nitens Lecanum compactum*. From Mrs. P. SMITH.

Cypripedium Toreador (*King George* × *Perseus*). From S. GRATRUX, Esq.

GROUPS.

Mrs. BRUCE and Miss WRIGLEY, Bury, (gr. Mr. A. Burns), staged a group to which a Silver-gilt Medal was awarded.

Silver-gilt Medals were also awarded to exhibits of Orchids staged by S. GRATRUX, Esq., West Point (gr. Mr. C. Branch), and Messrs. J. CYPHER AND SONS, Cheltenham.

Friday, November 20.—*Committee present*. D. Losh Thorpe, Esq. (in the chair), Messrs. D. A. Cowan, C. Branch, J. Cypher, J. Evans, A. Keeling, E. W. Thompson, and H. Arthur (Secretary).

FIRST-CLASS CERTIFICATES.

Odontoglossum Marian Gratrix (*Amethyst* × *Mars*).—A large flower, heavily blotched with crimson, the front lobe of the lip being white. From S. GRATRUX, Esq.

Cypripedium J. M. Black, West Point variety.—A variety with a round, dorsal sepal heavily margined with white. From Mrs. GRATRUX.

Odontoglossum Thetis var. *Dusky Maid* (*Solon* × *Dusky Monarch*).—A very distinct flower, heavily blotched with burnt carmine on a white ground. From Mrs. P. SMITH.

Brasso-Cattleya British Queen, Loshville variety.—An exceptionally large flower, with rosy-mauve sepals and petals; the large, round lip is beautifully fringed. From D. LOSH THORPE, Esq.

AWARD OF MERIT.

Odontoglossum crispum The Princess.—From Mrs. P. SMITH.

GROUPS.

S. GRATRUX, Esq., West Point (gr. Mr. C. Branch), staged a group to which a Large Silver Medal was awarded.

A Large Silver Medal was also awarded to Messrs. J. CYPHER AND SONS for an exhibit of *Cypripediums*.

WINCHESTER CHRYSANTHEMUM SHOW.

THE autumn exhibition of the Winchester Horticultural and Gardeners' Association, held in the local Guildhall on the 4th and 5th inst., was equal to these exhibitions of pre-war days. The Japanese-incurved Chrysanthemums were especially good, and keen competition resulted in the classes for cut blooms. The total number of entries was 265, as compared with 256 last year. The class for six vases of Single blooms, distinct, attracted nine competitors, and this proved one of the most popular classes in the show. The Vokes Cup, offered for the highest number of points was won by F. G. STUART, Esq., (gr. Mr. B. Wise). Trade exhibits from Messrs. HILLIER AND SONS, Messrs. G. JONES AND SON, and Messrs. JEFFERY AND SONS, added to the attractiveness of the show.

Obituary.

Alexis Callier.—We regret to learn from the Belgian Press of the death, on November 12, of M. Alexis Callier, President from 1906 to 1925 of the Société Royale d'Agriculture et de Botanique de Gand. M. Callier, who was seventy-five years old, had a brilliant career at the Bar, from which he retired in 1922 with the title of Procureur Général Honoraire; he also occupied a high position in horticultural affairs, and was chosen by the Ghent Society to follow Count Oswald de Kerchove in the Presidency, as being the only possible successor to so brilliant a man. For nineteen years he presided over successive Ghent "Floralies," and attracted the support of all the members by his unflinching tact, capability, good humour and integrity. During the present year, in March, M. Callier retired from the Presidency in favour of the present Count de Kerchove de Denterghem, the Governor of East Flanders, and was himself nominated President of Honor. He took a keen interest in the University of Ghent, and was one of the founders and directors of the Institut Supérieur des Hautes Etudes in that ancient town. He was universally liked and respected, and will be remembered for long, both at the Bar and by his horticultural and university friends, as an eminent lawyer, a distinguished chief, and a firm and benevolent personality.

Michael Simons.—We regret to record the death, at his residence, at Kensington Gate, Glasgow, on the 20th inst., of Mr. Michael Simons, who was well-known as one of the partners of Messrs. Simons, Jacobs and Co., fruit importers and produce brokers. Mr. Simons was the eldest son of Mr. Benjamin Simons, one of the founders of the firm. He entered the business as a youth, and did much in his business career to develop the fruit trade. Mr. Simons, who was in his eighty-fourth year, devoted much time to public affairs and did valuable work. Entering the Town Council of Glasgow in 1883, his ability and energy were recognised by his appointment as a Bailie, and he served in the Council until 1892, when the calls of his business compelled him to retire. He was also, for a time, chairman of the Glasgow Institute of Fine Arts. In 1905, Mr. Simons, who was a J.P., was appointed a Deputy Lieutenant for Glasgow. In recognition of his services to the Spanish fruit trade he was made a Knight of the Order of Isabella la Católica.

GARDENING APPOINTMENTS.

Mr. J. Dixon. for the past three years gardener to W. SCOT HENDERSON, Esq., The Grange, Walton-on-the-Hill, and previously seven years gardener to The Lady ELA RUSSELL, Chorley Wood House, Hertfordshire, as gardener to J. RITTERSHAUSEN, Esq., Dorincourt, Upper Warrington, Surrey. (Thanks for 2/6 for R.G.O.F. Box.—EDS.)

Mr. S. Peard. for thirty-eight years gardener and Orchid grower to the late M. S. BOND, Esq., and Mrs. M. S. BOND, at Croylands, Surbiton, as gardener to H. M. BOND, Esq., at Bylands, Woking.

ANSWERS TO CORRESPONDENTS.

CORRECTION. In the report of the National Chrysanthemum Society's show, p. 396, the address of Mrs. Fox (gr. Mr. S. McCaul), who showed a large specimen of Chrysanthemum, was given as Medmenham Abbey, whereas it should have been Melmouthe Lodge, Cookham.

CHRYSANTHEMUM LEAF WITH PURPLISH-RED MARKINGS. O. W. The purplish-red markings on the Chrysanthemum leaf have been subjected to careful examination, but no fungus mycelium has been found. In certain parts of the leaf there are brownish spots, and these show Botrytis, but we do not think this is the cause of the trouble. It is probable there is something wrong at the roots, possibly overfeeding at a late date, or the application of some chemical fertiliser at too great a strength. The general size and substance of the leaf suggests good cultivation, so that discoloration must be due to some comparatively late mistake.

CHRYSANTHEMUM CRIMSON DAWN. We are informed that Chrysanthemum Crimson Dawn which obtained an Award of Merit at the Royal Horticultural Society's meeting on November 17, was exhibited by Mr. J. Shoebridge, St. John's Hill, East Grinstead, and not by Mr. H. Shoesmith, junr.

COST OF PRUNING FRUIT TREES. S. G. T. Pruning fruit trees may occupy anything from five minutes to half-an-hour per tree, according to size and condition, so the price must vary enormously. The best plan would be to prune a few, and see how much time was taken, and base the price on that. The cost of pruning large plantations of Apples ten to fourteen years old—large bushes—worked out at about 4d. per tree, or about £5 per acre. This may serve as a rough guide. The cost of pruning bottom fruit would be in the neighbourhood of £2 10s. per acre for mature bushes.

DAHLIA TUBERS FAILING TO GROW. W. J. L. The Dahlia tubers which you submitted for examination are suffering from a bacterial disease which has destroyed the growing points and prevented further growth.

FERNS DISEASED. T. M. and Sons. The symptoms are those of the trouble caused by eelworms; no eelworms were, however, found in the specimen sent.

IVY ON WALL. J. W. It is generally believed that Ivy growing on walls tends to make the building damp, but this is disputed, indeed, many are of the opinion that the roots of the plant extract moisture and tend to keep a building dry. In any case the leaves will throw off a considerable amount of rain, especially if the Ivy is kept closely trimmed and the foliage is very dense.

MAHONIA. T. O. The appearance of this evergreen shrub is often much improved by pruning. The plants may be cut hard back during April. Lime in the soil is not essential as Mahonias thrive very well in chalk soils and also in ground deficient in lime.

NAMES OF FRUITS. C. W. 1, Cox's Orange Pippin; 2, King of the Pippins; 3, Allington Pippin; 4, probably French Crab. W. H. G. Pear decayed, but resembles Josephine de Malines. F. H. A. 1, Allington Pippin; 2, Newton Wonder; 3, Bramley's Seedling; 4, Beurré Diel.

NAMES OF PLANTS. E. H. 1, Cotoneaster microphylla; 2, C. Simonsii; 3, Cupressus Lawsoniana var. lutea; 4, C. nootkatensis; 5, C. Lawsoniana; 6, Thuya plicata; 7, T. dolabrata. X. Y. Anthericum variegatum. E. B. Polypodium aureum. W. L. K. Salvia leucantha. G. W. Vaccinium corymbosum. C. H. Acacia podalyriaefolia. J. T. W. Cotoneaster microphylla. W. H. G. Shrub: Hippophae rhamnoides; hardly plant; probably Epimedium perralderianum (send in flower).

THE WATERING OF NEWLY-POTTED PLANTS.

M. J. B. The treatment of plants in respect to watering after they are potted depends on circumstances, but in the majority of cases, watering is necessary. If the soil is used in so moist a condition as to not need watering, it would not work satisfactorily, and would be liable to lose its texture when the necessary firming was done. A few subjects, especially Cactaceous plants, might not need to be watered after the operation of potting, but root disturbance usually necessitates an immediate supply of moisture to prevent flagging.

POLLARDING MULBERRY TREES. E. H. Mulberry trees withstand hard pruning very well, but we do not advise pollarding; prune hard, cutting back the long, out-standing limbs, if possible, to where there are already small side branches. Complete this work during the next two months and dress the cut surfaces with tar.

PERNETTYA MUCRONATA. H. S. B. There is something mysterious about the berry-bearing character of the Magellan Heath. To obtain a good set of fruit cross pollination appears to be essential, hence Pernettyas should always be cultivated in colonies. The best soil for the plants is a cool, moist medium free from lime, so do not bring up any of your subsoil to the surface.

RADISHES FOR MARKET. M. de K. There is not much demand in Covent Garden Market for Radishes between now and Christmas. Radishes are most profitable about March.

VINES OUT-OF-DOORS. A. A. A. You are not likely to be very successful with the fruiting of vines out-of-doors unless the situation is a very favoured one. You do not state if the small vine has ever been trained to the wall of the house. If not, as it is trailing along the ground, it would be advisable to attach it to a stout pole or other support for its foliage effect, especially in the autumn. With regard to the vine on the side of the house, you need to cut out a sufficient number of the shoots, especially the old ones, to allow room for the sun and air to reach those that are retained. Wine may be made from the small white Grapes as follows:—to three pecks of Grapes, picked and heaped, put three stones of moist sugar and nine gallons of water. Bruise your Grapes carefully before you mix them with the sugar and water. Put the whole into a large, open vessel, and stir them daily for ten days or a fortnight. When the fermentation ceases pass the whole through a fine sieve and put it into a cask; be sure that the latter is quite filled, then bung it down and keep the wine twelve months before you bottle it.

Communications Received.—G. F. C.—C. W. S.—W. H. M.—S. W. T.—W. R. C.—P. S.—A. T. H.—E. D.—A. B., New York—G. A. L.—M. A. C.—Dr. D.

CATALOGUES RECEIVED.

GEORGE BUNYARD AND CO., LTD., Maidstone.—Trees, Shrubs, etc.; Manures.
H. J. JONES, Ryecroft Nurseries, Lewisham.—Chrysanthemums, Michaelmas Daisies, etc.
SHEPPARDS, Shawhurst Nursery, Hollywood, near Birmingham.—Rock and herbaceous plants.
W. POWER AND CO., Waterford.—Trees and Shrubs.
GEO. JACKMAN AND SON, Woking, Surrey.—Trees, shrubs, plants, etc.
HERD BROS., Penrith.—Forest trees, fruit trees, Roses, etc.
W. ARTINDALE AND SON, Nether Green, Sheffield.—Herbaceous plants and Roses (Wholesale).
G. BECKWITH AND SON, Hoddesdon, Herts.—Roses, (Wholesale).

Foreign.

J. J. GRULLEMANS AND SONS, LTD., Royal West End Nurseries, Lisse, Holland.—Gladioli.
M. HERB, Via Trivio 24-36, Naples, Italy.—Seeds (Wholesale).
L. SPATH, Berlin-Baumschulenweg.—Plants.

MARKETS.

COVENT GARDEN, Tuesday, November 24th, 1925.

We cannot accept any responsibility for the subjoined reports. They are furnished to us regularly every Tuesday by the kindness of several of the principal salesmen, who are responsible for the quotations. It must be remembered that these quotations do not represent the prices on any particular day, but only the general average for the week preceding the date of our report. The prices depend upon the quality of the samples, the way in which they are packed, the supply in the market, and the demand, and they may fluctuate, not only from day to day, but occasionally several times in one day.—Eds.

Plants in Pots, etc.; Average Wholesale Prices
(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Erica gracilis	s. d. s. d.
cuneatum	10 0-13 0	48's per doz.	24 0-30 0
per doz.	10 0-12 0	nivalis, 48's	24 0-30 0
—elegans	9 0-10 0	per doz.	24 0-30 0
Aralia Sieboldii	30 0-42 0	Above varieties	
Araucarias, per	12 0-18 0	in 60's, per	12 0-15 0
doz.	12 0-18 0	doz.	12 0-15 0
Asparagus plu-	36 0-60 0	—in Thumbs,	9 0-10 0
mosus	12 0-18 0	per doz.	
—Sprengeri	12 0-18 0	Marguerites, 48's	15 0-18 0
Aspidistra, green	12 0-15 0	per doz.	
Asplenium, per	12 0-18 0	Nephrolepis in	12 0-18 0
doz.	24 0-30 0	variety	24 0-30 0
—32's	12 0-15 0	—32's	30 0-48 0
—nidus	12 0-15 0	per doz.	15 0-18 0
Cacti, per tray,	15 0-24 0	Pteris, in variety	10 0-15 0
—12's, 15's	30 0-45 0	—large 60's	5 0-6 0
Chrysanthemums, pot	24 0-30 0	—small	4 0-5 0
grown, in var-	10 0-25 0	—72's per tray	2 6-3 0
ieties, 48's, per		of 15's	
doz.		Solanums, 48's,	12 0-15 0
Crotons, per doz.		per doz.	
Cyclamens, 48's			
in variety, per			
doz.			
Cyrtolium			

Cut Flowers, etc.: Average Wholesale Prices.

Adiantum deco-	s. d. s. d.	French Flowers—	s. d. s. d.
rum, doz. bun.	9 0-10 0	Narcissus	
—cuneatum, per	6 0-8 0	Paper White,	5 0-5 6
doz. bun.		per doz. bun.	
Arums (Richar-	9 0-10 0	Narcissus	
dias) per doz.		Soleil d'Or,	4 0-5 0
Asparagus plu-		per doz. bun.	
mosus, per		—Parma Violets,	4 0-5 0
bun., long		per bun.	4 0-5 0
trails, 6's,	2 0-3 0	Ranunculus,	
med. sprays	1 6-2 6	scarlet, per	5 0-8 0
short	0 9-1 3	doz. bun.	5 0-6 0
—Sprengeri, per	1 6-2 0	—orange, per	10 0-12 0
bun.		doz. bun.	
long sprays...	1 0-1 6	—Chillies, red	5 0-6 0
med. " "	0 4-1 0	and yellow,	
short " "		per pad	10 0-12 0
Bouvardia,		—Solanum	10 0-12 0
white, per		berries, per	6 0-9 0
doz. bun.	15 0-18 0	pad	10 0-12 0
Camellias, white	3 0-3 6	Gardenias, per	10 0-12 0
per box, 12's		box, 12's, 18's	10 0-12 0
Carnations, per	3 0-4 6	Heather, white,	10 0-12 0
doz. blooms...		per doz. bun.	10 0-12 0
Chrysanthemums		pink, per doz.	9 0-12 0
—white, large		bun.	
blooms, per	5 0-6 0	Honesty, per	18 0-30 0
doz.		doz. bun.	
—yellow, large	5 0-6 0	Lilac, white, per	8 0-9 0
blooms, per		doz. sprays	
doz.		Lilium longiflorum	4 0-4 6
—pink, large	5 0-6 0	long, per doz.	
blooms, per		—speciosum	4 0-5 0
doz.		album, long,	4 0-5 0
—bronze, large	4 0-5 0	per doz.	
blooms, per		—short, per doz.	— 4 0
doz.		—speciosum	
above colours		rubrum, long,	3 6-4 0
—medium blooms,	3 0-4 0	per doz.	
per doz.		blooms	2 0-2 6
—white spray	18 0-24 0	Lily-of-the-Valley,	30 0-36 0
per doz. bun.		per doz. bun.	
—yellow, spray,	12 0-15 0	Orchids, per doz.	
per doz. bun.		—Cattleyas	24 0-30 0
—pink, spray,	12 0-15 0	—Cypripediums	5 0-7 0
per doz. bun.		Roses, per doz.	
—bronze spray,	9 0-12 0	blooms, Rich-	6 0-8 0
per doz. bun.		mond	6 0-8 0
Croton leaves	1 0-2 6	—Liberty	6 0-8 0
per doz.		—Madame	6 0-8 0
Fern, French,	10 0-12 0	Butterfly	6 0-8 0
per doz. bun.		—Madame Abel	3 6-4 6
French Flowers—		Chatenay	6 0-8 0
—Acacia (Mi-	12 0-15 0	Melody	6 0-8 0
mosa) per doz.		Molly Sharnan	3 0-4 6
bun.		Crawford	6 0-8 0
Anemone De	12 0-15 0	—Ophelia	6 0-8 0
Caen, per doz.		Sunburst	6 0-8 0
bun.		Smilax, per doz.	2 0-2 6
Eucalyptus, per	5 0-6 0	trails	3 0-6 0
pad		Violets	
—Marquerites,	2 6-3 0		
yellow, per			
doz. bun.			

REMARKS.—Prices generally show a tendency to advance owing to a falling off in supplies, but trade is not brisk, many social functions having been abandoned owing to

the death of Queen Alexandra. Some excellent pot plants of Ericas, notably E. hyemalis, are a feature in the pot plant market, and there are also some choice Solanums well berried in sixty-sized pots in addition to Begonia Gloire de Lorraine.

Vegetables: Average Wholesale Prices.

Asparagus—	s. d. s. d.	Mushrooms,	s. d. s. d.
—Paris Green...	8 0-9 0	cups ...	3 0-4 0
—Spruce ...	1 3-1 6	—Broilers ...	1 6-2 6
Batavia ...	2 0-2 6	Onions—	
Beans—		—Dutch ...	7 0-7 6
—French, per		—English, per	
basket ...	4 0-6 0	cwt. ...	9 0-10 0
—Madiera, per		—Valencia ...	8 6-10 0
basket ...	4 0-6 0	Parsnips, per	
—Forced, per lb	1 0-2 3	cwt. ...	6 0-7 0
Beets, per cwt.	6 0-8 0	Potatoes—	
Cabbage, per		—King Edward,	
tally ...	6 0-10 0	per cwt. ...	5 0-7 6
Celery, per doz.		—others ...	4 0-4 6
fans ...	16 0-30 0	New Potatoes—	
Cauliflowers, per		—Guernsey ...	0 6-0 8
doz. ...	3 0-5 0	—Scilly ...	0 2-0 3
Carrots, per bag	6 0-9 0	Seakale, per	
Chicory, Belgian		punnet ...	3 0-3 6
per lb ...	0 24-0 3	Sprouts, per	
Cucumbers, per		bag ...	3 0-4 6
doz. ...	6 0-10 0	Savoy, per doz.	1 6-2 0
Dutch Onions ...	8 0-9 0	Tomatoes, English,	
Endive, per doz.	2 0-2 6	per strike—	
Horseradish, per		—pink, new crop	6 0-9 0
bundle ...	1 3-2 0	—pink, old crop	2 0-4 0
Lettuce, per doz.	—	—blue ...	2 0-5 0
—cabbage, per		—Guernsey ...	2 0-4 0
crate ...	4 0-7 0	—Jersey ...	1 0-2 0
—French Cos,		—C a n a r y	
per doz. ...	6 0-7 0	Island ...	12 0-18 0
		Turnips, per cwt.	5 0-6 0

Fruit: Average Wholesale Prices.

Apples, English,	s. d. s. d.	Grapes, per lb—	s. d. s. d.
per 4-sieve—		Alicante ...	1 3-2 6
—Cox's special	10 0-15 0	—Guernsey ...	0 10-1 0
—best ...	6 0-8 0	—Colmar ...	1 6-3 6
—others ...	3 0-4 0	—Muscat ...	3 0-6 0
Allington ...	2 0-4 0	—Almerian,	
—Ribston Pippin	4 0-5 0	per barrel ...	17 0-24 0
Apples, Cooking—		—Guernsey	
—Bramley's		Black ...	0 10-1 3
Seedling ...	4 0-7 0	Belgian—	
—Lane's Prince		—Muscats ...	2 6-3 6
Albert ...	4 0-6 0	—Black ...	1 3-2 0
—Lord Derby ...	3 0-5 0	Grape Fruit, ...	16 0-26 0
—Blenheim		—Blue Gossie	27 6-32 6
Pippin ...	4 0-7 6	Lemons, Messina,	
Apples, American		per box ...	16 0-22 0
Jonathan ...	12 0-14 0	—Malaga ...	18 0-22 0
—Newtown ...	13 0-16 0	Nectarines, per	
—Albamarle ...	26 0-30 0	doz. ...	6 0-18 0
—York Imperial		Pines ...	3 0-5 0
barrels ...	25 0-30 0	Peaches, English,	
Apples, Nova		per doz. ...	8 0-18 0
Scotia—		Pears, Doyenne	
—Ribston,		du Comice,	4 0-8 0
barrels ...	16 0-22 0	California—	
—Kings ...	18 0-25 0	—D'Anjou ...	25 0-26 0
—Blenheim,		—Nells ...	25 0-30 0
barrels ...	21 0-22 0	—Comice per	
—British Co-		case ...	16 0-18 0
lumbian,		—Kelfer, per	28 0-30 0
Cox's s. per		barrel	
case ...	14 0-15 0	South African	
Bananas ...	15 0-25 0	Oranges ...	16 0-24 0
Chestnuts,		—Jamaica ...	17 0-20 0
Italian, per		—American ...	17 0-20 0
bag ...	30 0-32 6	Walnuts, French,	
—French, per		per bag ...	7 0-8 0
bag ...	18 0-20 0	—Grenoble, per	
Cobnuts, per lb	1 3	bag ...	10 0-12 6
		—Doubles, per lb	1 0-2 6
		—French, per bag	8 0-10 0

REMARKS.—Rather brighter conditions have been ruling during the last few days, and it is hoped the improvement will now hold till Christmas. The apple trade is a shade better for both imported and home grown fruits. The quantities of the former available are heavier, but English Apples are not quite so plentiful. Grapes are moderately cheap with supplies showing some increase. Shipments of Oranges from Spain are advised as heavy, and both South African Oranges plentiful, prices are inclined to be easier. Forced Beans from Guernsey and Worthing are realising higher prices. New Potatoes from Guernsey are a slow trade. Some inferior samples from the Scilly Isles are not selling even at very low prices. Mushrooms are a firm market, in spite of some variation in supply. Some excellent Chicory from Belgium is meeting a poor reception, quantities being rather too heavy for the time of year. A few new-crop Tomatoes continue to arrive, and are selling moderately well, but those of the old crop are a drag on the market. Cucumbers remain a steady trade. Seakale is yet scarce, the sprinkling arriving is selling well. Salads are not a free trade and prices are rather unstable. Green vegetables have improved in demand, the colder weather being a helpful factor. Trade in Old Potatoes remains unchanged.

GLASGOW.

Four successive days of dense fog restricted business. In the cut flower market during the past week, but despite that adverse influence prices actually advanced. This unexpected result was largely due to the fact that Chrysanthemums are getting scarcer and that supplies were shorter than they have been since the season commenced. The market was at its best on Friday when keen buying of good quality flowers raised the price of special bronze to 6d. per bloom. On the week, however, average values work out as follow:—Pink Triumph, 10d. to 1/6 for 6's;

white and yellow Thorpe, extra, 1/4 to 1/9; medium, 10d. to 1/3; small, 7d. to 10d.; Almirante, 6d. to 10d.; Jean Pattison, 10d. to 1/4; Flame King, 11d. to 1/6; Reggie and pink and bronze Pagrain, 1/6 to 1/4; William Holmes, 10d. to 1/4; Golden Triumph, 7d. to 9d.; Parson's White, 6d. to 9d.; Source d'Or, 7d. to 10d.; Mary Richardson, 1/3 to 1/6; and Pink Profusion, 9d. to 1/6. Carnations were firm at 3/6 to 5/- per dozen, while Ophelia and Madame Butterfly Roses were dearer at 5/- to 6/6. Parma Violets made from 4/- to 5/- compared with 1/6 to 3/- a week ago, and English Violets were worth from 2/- to 4/-; French Narcissi averaged 16/- per cane for specials, and 10/- to 12/- for ordinary, while 8/- and 12/- was paid for Solanums. Liliums ruled firm, Richardias selling at 4/- to 5/-; Lilium longiflorum (Harrissii), 5/- to 6/-; and L. lancifolium rubrum, 1/9 to 2/3. Smilax was cheaper at 1/- to 1/3, and Asparagus was slow to move, prices ranging from 4d. to 1/3.

Business was very quiet in the fruit section. Prices for case Apples remained steady, but barrel fruit was generally 1/- to 2/- lower. Cox's Orange Pippin realised 10d. per lb. A first consignment of Canary Oranges averaged 22/- for both 180's and 216's, and Jamaica brands declined about 3/-. Palermo Lemons sold at 16/- per case (300), and 9/6 to 10/- per box. Grape Fruit was steady at 22/-. Prices for Californian and Jersey Pears, Dutch, English and Scotch Grapes were unchanged. In the vegetable market French Salads brought the following prices:—Lettuces, 6/- to 7/- per crate; Endive, 4/-; Flageolettes, 1/9; Celeriac, 4/- dozen; and Beans, 9d. per lb. Prices for Scotch Tomatoes ranged from 9d. to 1/- per lb.

NEW HORTICULTURAL INVENTIONS.

LATEST PATENT APPLICATIONS.

- 28,777.—Boustead, L. T.—Lawn-mowing machines. November 14.
28,093.—Buchan, C., and Buchan, S. M., and Buchan and Co., A. W.—Flower and plant holders, etc. November 9.
27,913.—Luke, S. J.—Garden frames and shelters. November 6.
27,401.—Wiame-Lenaers, P.—Root lifting and cleaning machines. October 31.
26,854.—Slack, C. M.—Gardening implements, etc. October 27.

SPECIFICATIONS PUBLISHED.

- 241,822.—Cooke, junr., F. H.—Boxes, applicable for containing and transporting flowers and the like.
240,915.—Stoakes, H. A. T.—Grass-cutting machines.

ABSTRACT PUBLISHED.

A light, portable shelter for protecting plants has been patented by Mr. A. G. Halstead, of Hayden, Stourpain, near Blandford, Dorset, under No. 239,973. The appliance is made up of a number of wooden frames covered on each side with oiled fabric to form double walls. The covering can be erected in different positions and forms an admirable shelter owing to the air space between the two pieces of fabric, which are perfectly waterproof. When the sections are not required they can be dismantled and stored away in a corner, battens protecting the fabric from damage.

This list is specially compiled for *The Gardeners' Chronicle* by Rayner and Co., Registered Patent Agents, of 5, Chancery Lane, London, from whom all information relating to Patents, Trade Marks and Designs can be obtained gratuitously.

Messrs. Rayner and Co. will obtain printed copies of the Published Specifications, and forward the same post free for the price of 1/6 each.

THE WEATHER.

OCTOBER, 1925, was an abnormally humid month with very wet nights, fair but dull forenoons and sunny afternoons. This was due to north-westerly winds replacing more than half the month's normal hours of north-easterly ones. Except for a cold spell from the 8th to the 16th, temperatures were high, particularly during the nights. The earlier half of the month was exceptionally calm, and even throughout the remainder no gale occurred. The first eleven days were practically rainless, but the rest of the month was extremely unsettled—by night. A considerable increase in the level of the subsoil water took place. The mean temperature of the air was 51°, or 2° above the average; the ground was curiously cool. Only 79 hours of bright sunshine were recorded, there being a deficiency of 17 hours. Rain fell on twenty days, or two more than usual; and the total quantity was nearly 41 inches, or practically half-an-inch above the average. Ozone was much above normal; but wind movement and evaporation were deficient. There was no frost in the shade, and only three slight "ground-frosts" were registered. Mist and haze were rather prevalent, and fogs occurred on six dates. Thunder was heard on the 26th.

SITUATIONS VACANT

Twenty words (or three lines including headline), 4s., and 1s. for every succeeding eight words (or line or portion thereof). Fee for having replies addressed to this office, 1s. over and above the amount payable for all words appearing in the advertisement, including our own address.

Advertisers desiring their Advertisements repeated must give full particulars. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. To part with original documents is to run a great risk of their being mislaid.

When addressing Box numbers, it is essential to give the initials or pseudonym, as well as the correct number of the box.

MUNICIPAL AND PUBLIC.

GLOUCESTERSHIRE EDUCATION COMMITTEE. INSTRUCTION IN SCHOOL GARDENING.

THE above Committee invite applications for the position of ADVISER and INSTRUCTOR in School Gardening. Applicants should be thoroughly versed in the theory and practice of Horticulture and be capable of stimulating interest in the above branch of education. Salary £230 per annum, rising by annual increments of £10 on approved service to £300 per annum, with travelling expenses on the county scale. Letter of application, with copies of three testimonials, should be sent to the SECRETARY, County Education Office, Gloucester, by 16th December, 1925.

BOROUGH OF ECCLES.

HEAD WORKING GARDENER.

APPLICATIONS are invited for the position of Head Working Gardener of the Eccles Corporation Cemetery.

Applicants should be trained and skilled gardeners with practical experience in Greenhouses, including propagation of bedding plants, Standard Chrysanthemums and decorative plants, and should have a knowledge of growing forest trees and shrubs, suitable for Public Park planting.

The person appointed should be able to control men and will work under the direction of the Parks and Cemetery Superintendent. The person appointed will also be required to pass a medical examination to the satisfaction of the Council's Medical Officer, and become a contributor under the Local Government and Other Officers Superannuation Act, 1922.

The salary is £3 10s. per week.

Applications, in candidate's own handwriting, sealed and endorsed "Head Gardener," stating age (which is not to exceed 40) and experience, together with copies of not more than three recent testimonials, to be delivered at the Town Clerk's Office, Town Hall, Eccles, not later than 10 a.m. on Monday, the 30th November instant.

EDWIN PARKES,
Town Clerk.

Town Hall.

Eccles,

17th November, 1925.

PRIVATE.

WANTED, at end of January, for Cheshire, HEAD WORKING GARDENER; four kept; not much glass, but really good general all-round knowledge and highest references essential; good cottage; SECOND also required same date.—Apply, with fullest particulars, wages, etc., W. F., Box 58, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED at once, Eastbourne, first class WORKING HEAD GARDENER; permanent situation; full particulars.—Write, H., c/o Smith's, 100, Finchley Road, N.W. 2.

WANTED, GARDENER, SINGLE-HANDED, thoroughly experienced Inside and Out; write full particulars, wages required with cottage; first class references essential.—P. A. LAYMAN, Park View, West Wickham, Kent.

WANTED, SINGLE-HANDED GARDENER, unmarried or without family; experienced herbaceous, roses, fruit, some glass. No mowing and good help given by other two men.—State experience, wages, etc., Mrs. CATTO, Old Rectory, Narborough, Leicester.

WANTED, energetic man as SECOND, chiefly Inside; charge of fruit and plant-houses; wages 38/- per week.—F. J. HARBROOK, Eastwood Grange Gardens, Ashover, near Chesterfield.

SECOND GARDENER required, thoroughly steady and respectable; principally to look after pleasure grounds, kitchen garden, and acetylene gas plant.—Apply, giving full qualifications, married or single, wages required, with copies of characters and references, to SMITH-WOOLLEY & CO., Land Agents, South Collingham, Newark.

WANTED, SECOND GARDENER for a block of fruit and plant houses, assist on Pleasure Ground; wages 35/-, and bothy. State particulars.—WORTH, Wern Gardens, Portmadoc, N. Wales.

SECOND GARDENER of three wanted for East Sussex; cottage if married; good experience and references essential.—Write age, wages, etc., to SUSSEX, Box 58, 5, Tavistock Street, Covent Garden, W.C. 2.

GARDENER, SECOND of six, required immediately; age 28 to 30; must have good experience with Carnations, Chrysanthemums and Vines; wages £2 2s. and cottage; men from Bucks, Oxon or neighbouring counties preferred; personal reference essential.—T. TUBB, Dorton House Gardens, Thame, Oxon.

WANTED, a FOREMAN for the houses; wages £2 per week, bothy, milk and vegetables and attendance.—Apply, E. W. PULL, Petworth.

WANTED, FOREMAN for Inside, wages 36/-, bothy, duty paid; capable inside decorations; state particulars of experience.—CLEMENT, Mableton Gardens, Tonbridge.

WANTED, two good FOREMEN, married; one for kitchen garden, one for pleasure grounds, where several are kept.—Please state wages, particulars, to E. GUNTON, Branches Park Gardens, Newmarket.

WANTED, MAN for pleasure grounds, herbaceous borders, etc.; good references; wages 38/- per week, good cottage and garden.—HEAD GARDENER, Dynevor Gardens, Llandilo, S. Wales.

WANTED, young MAN for pleasure grounds, herbaceous borders, etc.; good worker; wages 31/-, bothy, milk and vegetables; duty 3/- every third week. G. JOHNSON, Milton Hill Gardens, Steventon, Berks.

GARDENER, married, required for pleasure grounds; good experience with lawns and herbaceous borders essential; wife to give part time help in laundry; good cottage, garden.—Send full particulars and references, J. COLLINS, Caldecote Towers Gardens, Bushey Heath.

WANTED, JOURNEYMAN, Inside and Out; no bothy, comfortable lodgings in garden.—Apply, C. TURNER, The Gardens, Borden Wood, Lipbook, Hants.

TRADE.

WORKING NURSERY MANAGER required immediately by well known firm to supervise the work and control the staff of a large nursery, mainly hardy herbaceous. First-rate ability, character and experience essential; country; applications treated confidentially.—Apply, with fullest possible particulars and stating salary expected, to L. S., Box 55, Tavistock Street, Covent Garden, W.C. 2.

REQUIRED, EXPERT, able to move big trees with his machine.—Apply, A. HARBERT, General Manager, Blenheim Estate Company, Estate Office, Blenheim, Woodstock.

WANTED, working FOREMAN; single; good at budding, grafting, and general nursery work, take charge if required and execute orders; state age, wage, refs.—SPARKES, The Nurseries, Yapton, Sussex.

FOREMAN GROWER wanted; experienced in Tomatoes and Cucumbers, etc.; house found; progressive.—State wages, etc., GILL, Nurseryman, Falmouth.

WANTED. — Two Competent ROSE GRAFTERS.—Apply, FRED STEVENS, High View Nurseries, Cheshunt, Herts, stating wages, with previous experience and references.

WANTED, competent KNIFESMAN with general knowledge of fruit trees, roses, shrubs, forest trees, etc.—Apply, with copies of testimonials and wages wanted, with free house and firing, to MANAGER, Lisadell, Sligo.

GROWER, all round, for country work under foreman; bungalow, no convenience for children; state experience and wages.—B. R., Box 62, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, NURSERY HAND, permanent; used to budding, grafting, packing, etc.—Wages and references to HOPWOOD & SON, Nurserymen, Cheltenham Spa.

WANTED, MANAGER, flower seed department, wholesale seed merchants, country.—SEEDS, Box 52, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, for South Africa SEEDSMAN, with some knowledge of plants preferred. Excellent prospects for energetic single young man.—Apply, L. C. D., Box 53, 5, Tavistock Street, Covent Garden, W.C. 2.

WANTED, smart, energetic SHOPMAN with thorough knowledge of retail seed trade, one with sufficient nursery experience for booking orders preferred.—Apply, stating full particulars, JAMES WRIGHT & SONS, Nurserymen and Seed Merchants, Leicester.

WANTED, LADY FLORIST, experienced, for good class trade; must have good reference.—Apply, WILKINSON, Florist, Ilkley, Yorks.

WANTED, young LADY to assist in florists' and greengrocers' shop; with some experience in floral work.—State age, experience, and wages required to WATERMAN BROTHERS & BRANT, The Chalet Nurseries, Birchington.



Photo C. P. Raffill

HYDRANGEA PANICULATA.

THE Gardeners' Chronicle

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SUPPLEMENTARY PLATE.

Hydrangea paniculata.

AVERAGE MEAN TEMPERATURE for the ensuing week
deduced from observations during the last fifty
years at Greenwich, 40.6°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street,
Covent Garden, London, Wednesday, December 2,
10 a.m. Bar. 30.1. Temp. 38°. Weather Dull.

THE annual reports of the damage to crops by insect pests which are issued periodically on behalf of the Ministry of Agriculture by Mr. J. C. F. Fryer, the Director of the Pathological Laboratory, are always interesting and not the less so when the interest is quickened by vivid recollection of particular losses which have been suffered. The gardener must, indeed, be of short memory or of incorrigible optimism who does not remember for example, the heavy infestation by aphides and caterpillars to which his fruit trees were subject in 1923. In that year the attack was the worst within living memory and it is therefore all the more worth while to lay to heart the observation on p.28 of the Report—which we can confirm by experience—that in the case of leaf-curling Plum aphid "growers who sprayed early with nicotine spray have not

*Insect Pests of Crops, 1922-24. Ministry of Agriculture.
Miscellaneous Publications No. 49. Price 1.6 net.

suffered, but those who put off spraying until the attack became general have had no beneficial results." It is interesting to find that in the three years under review the bad year with respect to these pests of fruits occurred in between two good or fairly good years—1922 and 1924, of which the latter was as clean of aphid as its predecessor was foul. In attempting to account for the heavy infestation in 1923 Mr. Fryer draws attention to the observation of the Ministry's reporters that even so late as May aphides on fruit trees did not appear to be so numerous as usual and were apparently decreasing in numbers. Yet by the middle of June widespread and irreparable damage had been done by this pest. The weather conditions, which, again, few gardeners will fail to remember, were doubtless responsible for the sudden spread of the aphides. As Mr. Fryer states, the temperature during May and June was abnormally low "decidedly cool and dull, almost wintry." It would seem, therefore, that under the influence of these weather conditions though aphides themselves may have suffered, the fruit trees suffered more. They stood still. When the weather became better the aphides increased and multiplied and destroyed the young leaves as fast as they were formed. It may be also that the natural enemies of aphides found the cold weather uncongenial and failed to do their work of keeping down the pest. With respect to aphides on garden crops, it is particularly interesting to note from the Report that attack by these pests on Potatoes was fairly frequent in various localities in 1923, that except in North Wales aphides did but little damage in 1924, but that in 1922 sprouting tubers were attacked somewhat severely. These records are, of course, of special value because they may show some bearing on the prevalence of virus diseases of the Potato in years following severe attacks. Probably the most important subject dealt with in the Report is the new coal tar distillate—or carbolineum—preparations and their use as fluids for the winter spraying of fruit trees. Long known and used, albeit with precarious results, in Germany, the credit for introducing these insecticides into this country is due to the Dutch. So long ago as 1916 the head of the Dutch Phytopathological service, Dr. van Poeteren, advocated the use of carbolineum preparations for the protection of fruit trees from attack by insect pests, but it was not until the past few years that their use became at all general in this country. So far the results which have been obtained by the use of the tar-distillate sprays, have been excellent. Trees sprayed with carbolineum preparations are in large measure freed from the eggs of aphid and Apple sucker, so that if care is taken to obtain a proved brand and if the makers can keep the brand of constant composition the fruit grower should be able at last, by use of carbolineum spray in winter and a lead arsenate, lime sulphur, or nicotine spray in spring, to keep his orchards clean. Another pest long regarded as ineradicable appears from the Report to be susceptible of control. Long ago Mr. Pearson asserted that Big Bud may be kept under by means of lime sulphur wash. His contention would appear to be justified. A spraying in March when the leaves of the Black Currant are still small, as was suggested by Mr. Lees of Long Ashton, will do much to destroy the migrating mites. Whether, however, one application

alone is likely to be successful in getting rid of the pest is, we think, still doubtful. Mr. Massee, of East Malling, is, we understand, engaged in studying this interesting and important subject and we may therefore hope before long for new light upon it and sure guidance in our efforts to rid our plantations of Big Bud. Growers under glass who suffer from the damage done to their plants by White Fly are probably aware—as the Report states—that fumigation with tetrachlorethane has been widely and successfully used by the Tomato growers at the Lea Valley. Though more costly than cyaniding, the application of this remedy is less troublesome and risky. Gardeners will work at their beds the more securely in the knowledge that the Pathological Service of the Ministry is exercising a vigilant surveillance lest undesirable aliens—pests from abroad—should establish themselves on our shores. Every year some insect of foreign origin and of potentiality for evil finds its way to this country—the Potato moth, for example, which was discovered by the Ministry's inspectors in a consignment of Potatoes from the Canaries; weevils in Snowdrop bulbs from Smyrna which might attack Onions and Shallots, and so on. Not all foreign insects, however, are inimical; and the Ministry, recognising this fact, has encouraged one, a minute Chalcid fly, *Aphelinus mali* by name, to find asylum here in order that it may attack and peradventure control our own objectionable Woolly aphid. It is reported that the parasite is doing well in certain districts, so that the outlook of the Woolly aphid would appear to be growing black. All gardeners will be grateful to the Ministry for the admirable work that it is doing in aiding them to keep down the pests which take such heavy toll of their crops and for supplying them with such a concise and readable review of the work which it has done in keeping the pests under surveillance and in rendering them less dangerous to the horticultural community.

Our Almanac.—We propose to publish in an early issue of the New Year a *Gardeners' Chronicle* Almanac for the year 1926. In order to make it as useful as possible for reference, we shall be obliged if secretaries of horticultural, botanical and allied societies, or any of our correspondents, will send us IMMEDIATE INFORMATION OF ALL FIXTURES FOR THE COMING YEAR.

Flower Shows in 1926.—The County Borough of Southport will hold its next exhibition in Victoria Park on Wednesday, Thursday and Friday, August 25, 26 and 27, 1926. The Taunton Deane Horticultural and Floricultural Society has arranged to hold its next exhibition on Wednesday and Thursday, August 11 and 12, 1926.

Plants of Special Interest at Kew.—The small house in Kew Gardens in which plants of special interest are shown, contains some very interesting subjects. A series of plants of different genera, and, in several cases, of different Natural Orders, is shown to illustrate similarity of habit of growth. Some of the widely differing members of the plant world are externally so much alike that they might be mistaken for each other. For example, *Vitis quadrangularis*, *Pelargonium tetragonum*, and *Rhipsalis pentaptera* are all succulent-habited plants with erect, quadrangular stems, and no one would be likely to associate either *Vitis quadrangularis* with the vines, or *Pelargonium tetragonum* with the

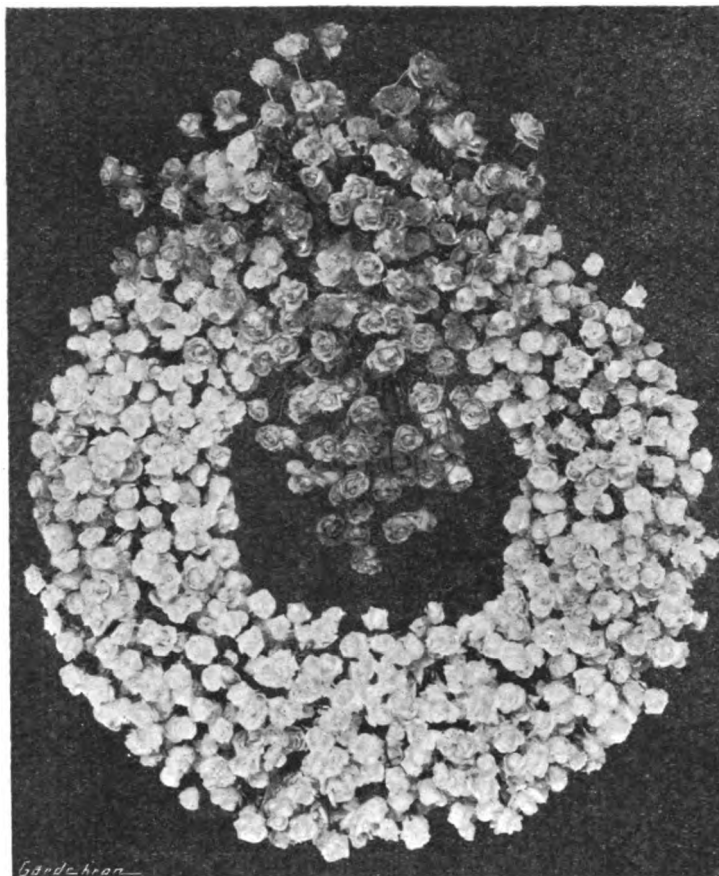
Geraniums, from their superficial appearance. Again, *Cereus Eyresii*, *Anhalonium Williamsii* and *Euphorbia obesa* are all globular or spherical plants of the Cactoid type. The South African *Aloe petricola* is almost as like to *Agave guatemalensis* from South America as any two plants could well be. Very similar also are the Candelabrum-like growths of *Cereus validus* and *Euphorbia Candelabrum*. Other plants besides Heaths have Erica-like foliage, and a series showing these includes *Erica Willmoreana*, *Fabiana imbricata*, *Calythrix tetragona* and *Gamolepis euriopoides*. The house also contains examples of winter-flowering Begonias raised from *B. socrotana*, of which some good specimens may be seen in flower, the small blossoms being a rosy-cerise shade, fading to rosy-purple. This species has also been crossed with *B. Dregei* and given us the useful *Gloire de Lorraine* type, of which some splendidly-flowered plants are on view. Of the large-flowered varieties, *Fascination*, with pale lemon flowers heavily suffused with orange-red at the edges, is one of the best. Equally interesting are plants exhibiting phyllodes, petioles assuming the form and function of leaves, and phylloclades, flattened shoots assuming the form and function of foliage. Examples of phylloclades include *Ruscus aculeatus*, *Semele androgyna*, *Asparagus falcatus*, and *Phyllanthus montanus*. Then there are those with branched, leaf-like phylloclades, such as *Phyllocladus trichomanoides* in which the phylloclade is very like a pinnate leaf. In *Casuarina montana*, thin, whip-like cylindrical shoots assume the function of the leaves. In some cases the phylloclades have small leaves attached, such as in *Genista monosperma*, *Carmichaelia australis* and *Muehlenbeckia platyclados*. In certain plants the phyllodes are linear, and in other flattened, such as in *Acacia armata*, and *A. pycnantha*. Needle-like phyllodes are found in *A. verticillata*. *Acacia melanoxylon* is an interesting plant, for it exhibits the transition to the phyllode, its first or juvenile leaves taking the form of compoundly pinnate foliage. Many of the Acacias have phyllodes, but *A. Baileyana* has normal leaves.

Fruiting of *Jasminum officinale*.—Dr. G. Claridge Druce, Secretary of the Botanical Society and Exchange Club of the British Isles, informs us that he has received well-formed fruits of *Jasminum officinale* from Dr. G. J. Haynes Thomas, of Chester. The fruits ripened on the 6th of November at Chester.

Certified Pure Stocks of Seed Potatoes of Immune Varieties.—The Board of Agriculture for Scotland announces that certificates have now been issued in respect of the Potato crops of the immune varieties which were inspected during the past growing season, and were found to be true to type and to attain a standard of purity of not less than 99.5 per cent. As in previous years, a register of the certified crops has been compiled for the information of Potato growers, merchants and dealers. This register, which contains full particulars of the names and addresses of the owners and of the respective varieties and acreages of the certified crops, is now available. It will be sold at the nominal price of 2/-. Applications for copies of the register should be made to the Secretary, Board of Agriculture for Scotland, York Buildings, Queen Street, Edinburgh, and should be accompanied by the appropriate remittance. The Northern Ministry

of Agriculture, Ireland, has also published its list of growers in the season of 1925 of crops of Potatoes of immune varieties which were inspected by the Ministry when growing and found to be true to type and of a purity of not less than 99½ per cent. Applications for the list should be made to the Ministry of Agriculture for Northern Ireland, 25, Wellington Place, Belfast.

National Rose Society's Tribute to the Memory of the late Queen Alexandra.—Among the many floral designs which figured at the funeral of the late Queen Alexandra, few, if any, were of so striking a character or so appropriate as the magnificent wreath of Roses sent by the National Rose Society. This tribute of love and esteem, illustrated herewith, consisted of no fewer



THE NATIONAL ROSE SOCIETY'S TRIBUTE TO THE MEMORY OF QUEEN ALEXANDRA.

than 14,040 Rose blooms, and the varieties of the late Queen Mother's favourite flower were *Roselandia*, *Richmond* and *Madame Abel Chatenay*.

New Rhododendron House at Kew.—The Kew authorities are erecting a new glass-house for the special purpose of growing Chinese Rhododendrons. This new house is attached to the back of the north octagon of the Temperate House, and consists of three spans covering an area of approximately forty-five feet by seventy feet. The central spans are supported by teak-wood pillars. The whole of the centre of the house will be occupied by a bed with a border or path five feet wide all round it. The new glass-house is of low elevation, very heavy, in appearance and built of teak; it does not harmonize at all with Decimus Burton's noble structure which it adjoins, and it is fortunate that it is hidden away in a recess at the back.

Elephant Hunt in a Market Nursery.—There was plenty of excitement at Whetstone on Sunday last when an elephant broke loose from its keepers. The huge animal was being conveyed from Barnet to the docks prior to being shipped to Buenos Ayres. After breaking shop windows and doing other damage in its excitement it broke down twenty yards of

the fencing of Messrs. James Sweet and Son's nurseries at Whetstone, spoiled the appearance of one of the glasshouses and ambled across numerous nursery beds.

Glasgow Flower Show.—As the new Kelvin Hall will not be completed in time, the Directors of the Glasgow and West of Scotland Horticultural Society have decided to hold next year's show in St. Andrew's Hall. Owing to the restricted accommodation, the number of competitive classes will be reduced temporarily and very little space will be available for trade exhibits. The show for 1926 is being promoted by the Society, independent of the Corporation.

The Potato Crop.—The detailed estimates of the yield per acre of Potatoes show that the crop is heavier than was expected. The growing weather of August and September had a very beneficial effect on the crop, which at the end of July had promised to be light. The average yield per acre over the whole of England and Wales is estimated at six-and-a-half tons, or two-fifths of a ton above the average, and half-a-ton more than in 1924. The acreage planted was considerably greater than last year, so that the estimated total production on agricultural holdings of 3,213,000 tons exceeds the small total of 1924 by 517,000 tons, and is 90,000 tons greater than the average of the ten years 1915-24. On the whole the tubers are sound, but there is some disease in several districts. Most of the crop was stored dry and clean in the first half of October, but much of that carted later was clamped in dirty condition. A few of the latest crops in the north had not been carted before the recent severe frost. Yields are above the average in most counties, relatively the poorest results being in the Lindsey Division of Lincoln and a few midland and south-eastern counties.

Potato Arran Consul.—Mr. Donald McKelvie, Lamlash, has received official intimation that his new maincrop Potato, Arran Consul, has been awarded the Lord Derby Gold Medal for the best seedling in the 1925 trials at Ormskirk. This is the third occasion on which Mr. McKelvie's new productions have gained that distinction, his previous successes having been won with *The Ally* and *Arran Comrade*.

Scottish Sweet Pea Trials.—Most of the principal raisers, including Mr. Robert Bolton, Mr. W. J. Unwin, Messrs. Dobbie and Co., Dr. Hinton, Messrs. Atlee Burpee and Co., and Messrs. C. C. Morse and Co., are represented in the Sweet Pea Trials at Helensburgh, where seventy new varieties have been sown, as compared with fifty-one in the past season. Although the financial year does not close until December 31, there is a credit balance of £80 on the working of the Scottish National Sweet Pea and Rose Society in 1925, and in addition to the annual show to be held at Glasgow in August next, it has been decided to hold a provincial show at Elgin later in the month.

Railway Station Gardens.—For the sixth year in succession Charfield station has gained the premier award in the competition for the best-kept station garden on the L.M.S. system (Midland Section). Charfield is placed first in the special section, second place going to Ockendon (Essex), which last year was placed third. The competition embraced some three hundred entries.

Home-Grown Tobacco.—The quantity of home-grown Tobacco retained for consumption in Great Britain and Northern Ireland during 1924 was 10,000 pounds, representing a revenue to the Government of £3,400 as compared with 5,000 pounds and a revenue of £1,400 in the preceding year. Five licences were issued to Tobacco growers during the year, and the areas approved for the cultivation of Tobacco for curing purposes in 1924 was twenty-six acres in England and Wales, against thirty-one-and-a-half in 1923. During the year one grower availed himself of the concession allowing Tobacco to be grown free of duty for agricultural and horticultural purposes, the area approved being about seven poles.

Appointments for the Ensuing Week.—Sunday December 6: Wakefield and North of England Tulip Society's meeting. Tuesday, December 8: Jersey Gardeners' Society's meeting. Wednesday, December 9: Wimbledon and District Gardeners' Mutual Improvement Society's meeting; Sheffield Chrysanthemum Society's meeting; Bath Gardeners' Society's meeting; Friday, December 11: Royal Horticultural Society of Ireland Council meeting; Association of Economic Biologists meet; Orchid Club meets.

"Gardeners' Chronicle" Seventy-Five Years Ago.—*Hints on the Cultivation of Hollyhock.*—In presenting these few brief remarks upon the cultivation of the Hollyhock, I beg to say, that another year's experience induces me to enforce the same routine as the previous one, feeling confident, after twenty-five years cultivating this ornamental plant, that purchasers following these directions may ensure success. The Hollyhock will grow best in good old garden soil, well trenched over to the depth of two feet, with plenty of thoroughly decomposed manure, such as old Cucumber beds, or night soil mixed with earth. Sandy loam they like, and if the sub-soil is wet they will thrive remarkably well in the summer, but in the winter wet is very injurious to them; to prevent which, I remove to a depth of one or two inches, the mould round the neck of the plant, and fill up with white sand, about six inches round the stem, level with the surface; it is simply to preserve them from wet, insects and slugs, from which, in the winter, they are apt to suffer very much, if not killed. They may be propagated by single eyes in July and August, also by cuttings in the spring, placed on a slight bottom heat. Young plants raised from summer cuttings are best preserved by repotting them in October into large pots—the larger the better, in light, rich, sandy earth, and placed in a cold frame; thus they will grow during the winter. In March or April turn them out into the open ground and they will bloom as fine and as early as if planted in the autumn. Plant them not less than four feet from row to row, and three feet apart in the row; if grouped in beds, not nearer than three feet each way. They will grow well in the shade of distant trees, but by no means must the roots interfere. In May, when the spikes are grown about a foot high, thin them out according to the strength of the plant; if well-established and very strong, leave four spikes; if weak, two or three, or only one, at the same time placing a stake to each one separately. The most robust grower does not require a stake higher than three feet from the ground. Stake them before they get too high, and secure them well by tying, and they will grow erect. If the weather is dry at this season of the year, they must be watered with a solution of guano, or any other liquid manure, poured carefully round the roots, avoiding pouring it on or too near the stems. To grow the flowers fine, cut off the lateral shoots, thin the flower buds, if crowded together, and take out the top of the spike, according to the height desired, paying attention to the usual height and habit of the plant. Observe, by topping it you may increase the size of the flower, but at the same time shorten its duration of flowering, and perhaps disfigure its appearance. *W. Chater, Saffron Walden, Essex, September, 1850. Gard. Chron., December, 7, 1850.*

ALPINE GARDEN.

GUTHRIE'S SAXIFRAGE.

SAXIFRAGES of the London Pride section are none too popular, owing, probably, to the easy culture of the common *S. umbrosa*, the ordinary, yet valuable London Pride or None-so-Pretty, which is found in all sorts of gardens and in many positions. From it have been derived a few attractive hybrids, known only to a limited number of cultivators.

S. Guthrieana is understood to be not only one of these hybrid varieties, but also to be a double hybrid. It is believed to be derived from *S. Andrewsii* and *S. Aizoon*, the reputed

sunny. But, apart from the weakness which appears inherent in most plants with variegated foliage, this Saxifrage suffers from another cause, for birds frequently tear up the plants and more than once have I had good specimens torn to pieces by these winged marauders. Some may explain that the birds do this for the purpose of securing grubs from the roots, but other plants of the same hybrid with green leaves are left untouched, so that one can only suspect that the colouring attracts them.

Sometimes the rosettes are carried away for nest-building purposes, but some are generally left lying on the ground, and these should be reinserted in the soil and guarded against the birds by some device.

The green-leaved plant is not so distinct

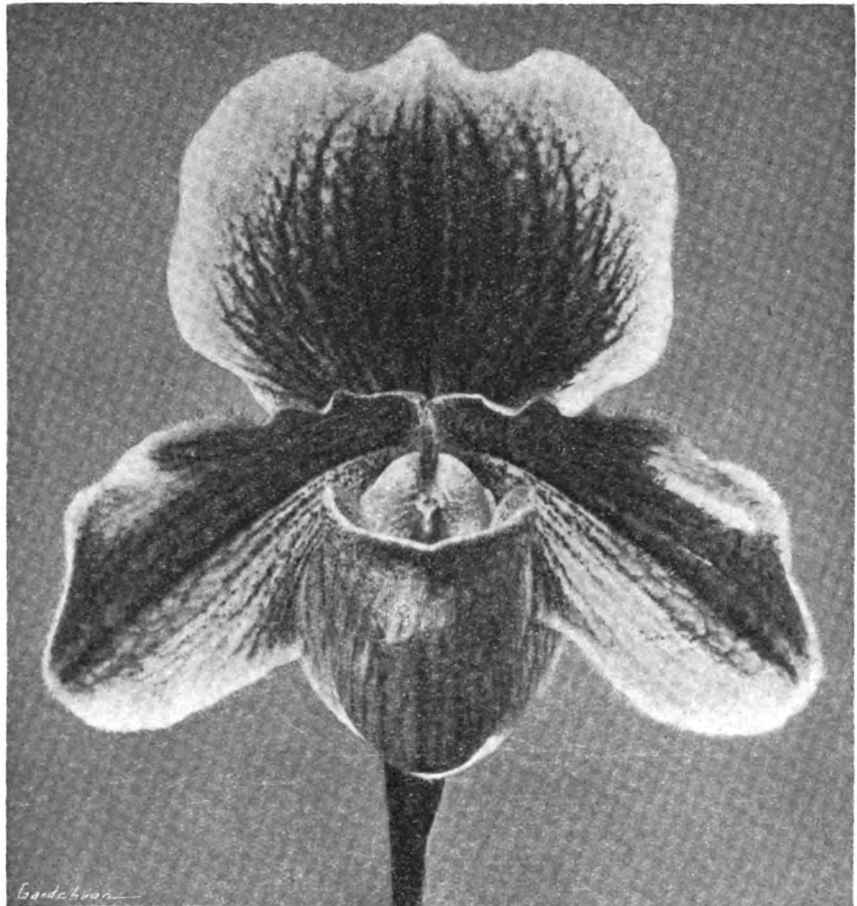


FIG. 180.—CYPRIPEDIUM BRIGADIER, BECKTON'S VAR.

(see p. 452).

parents of *S. Andrewsii* being *S. umbrosa* and a form of *S. Aizoon*. In its general features it resembles *S. Andrewsii*, which is finer than *S. umbrosa*, but it is neater in all its parts and is very pretty with its rosettes of leaves and loose sprays of delicate pink flowers.

There is a very delightful variegated variety named *S. Guthrieana variegata*, which appears to be rarer than it was some few years ago. Even the most bitter critic of variegated-leaved plants cannot well deny its beauty. It has fine rosettes of white, yellow and pink striped leaves, and when it flowers these contrast pleasingly with the delicate pink blooms on their graceful spikes.

It is a little disappointing to have to state that this variegated form is difficult to retain. It appears to require dividing every two years at least, and, preferably, it should be performed every year. The plant needs a fairly good soil and a position which is not too warm and

as that with the variegation. I am unaware by whom this hybrid was raised, and have no information regarding its first appearance. *S. Arnott.*

LIMONIUM BINERVOSUM

THIS miniature Sea Lavender is excellent in the rock garden, where its distinctive appearance and graceful inflorescences show to the greatest advantage. In its panicles of pale lavender flowers, on stems from nine inches to one foot in height, it may be likened to a liliputian form of *Statice latifolia*. The leaves are not unlike those of the *Auricula*, and are more or less prostrate.

This alpine grows freely in well-drained, sandy loam in full sun, and will flower from July to late autumn. Some little protection from extreme winter damp may be expedient, as I have known this plant succumb to continual fog and rain. *Ralph E. Arnold.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Dendrobiums.—The members of the deciduous and semi-deciduous group of the spring-flowering Dendrobiums have completed their growths, and will only require a very moderate supply of water at the roots for the next few weeks, but shrivelling of the pseudo-bulbs must not be permitted through lack of moisture. The plants should be exposed to all the light possible, kept fairly cool, and every precaution taken to prevent them making premature growth. *D. Phalaenopsis* has been flowering for some time past, and after the flower scapes are removed a rest of several weeks' duration should be allowed by placing the plants in a house having an intermediate temperature, and affording the roots just sufficient water to prevent shrivelling. The evergreen species of Dendrobium, which embrace such as *D. thyrsiflorum*, *D. densiflorum* and *D. fimbriatum* should be given a decided rest after they have completed their growths. Place them near to the roof-glass in a house the temperature of which does not fall below 55°, and afford them a very limited supply of water at the roots.

Odontoglossum.—Plants of *Odontoglossum grande* and *O. Insleayi* should be grown in a slightly warmer atmosphere during the winter than is necessary for *O. crispum*, *O. Pescatorei* and hybrids of these Columbian species. Plants that have been growing in the cool division during the summer should now be placed in the intermediate house, and given a period of rest by affording them a very small amount of water.

Phalaenopsis.—These Orchids require to be treated with great care during the winter, affording them only sufficient water to keep the leaves plump. The plants should be examined each morning, and if the Sphaenum-moss on the surface has become dry it should be lightly sprinkled with tepid water; also damp the sides of the receptacles and the roots that are clinging to them. Many plants will be developing flower spikes; these latter should not be allowed to remain on the plants for an undue length of time after the flowers have expanded, or the plants will be weakened and prematurely injured. Grow them in a temperature that does not fall below 60°.

THE FLOWER GARDEN.

By W. ACTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Gunnera scabra.—This noble plant, which makes such magnificent specimens by the lakeside, giving quite a tropical appearance to the landscape, needs some protection in severe weather. The material used should not be of too close a nature, and the best form of protection is a rough, Willow, skeleton basket, made to meet the size of the plant and inverted over the crown. This serves as a support for dry litter during the periods when protection is necessary, and the injury, which so often happens to the embryo leaves forming the crown when the litter is placed directly on it, is obviated. During the period of protection frequent inspections should be made to see that rats are not using the protected area as a breeding place.

Fatsia japonica.—As a late-flowering shrub this highly decorative Arahia forms a most striking feature of the pleasure grounds and it should be more widely planted where suitable conditions for its welfare can be found. Its hardiness in the southern counties is beyond question, but a sheltered spot should be selected

for it as, owing to its late-flowering, the feathery, paniced inflorescences may be prevented from developing their full beauty in exposed positions, and cutting winds are apt to disfigure the large, handsome, glossy leaves. Various botanical descriptions give its height as from three feet to five feet, but under favourable conditions it rapidly doubles this maximum, and records of its height in various localities would be interesting.

Fruiting Crabs.—The merits of these trees in planting schemes are two-fold, as besides taking high rank for decorative value amongst spring-flowering trees and shrubs, their highly-coloured fruits make them objects of great beauty during the autumn. John Downie and Dartmouth Crabs, planted in groups or as single specimens in the plantations skirting drives, or in shrubberies of sufficient proportions to give scope for the purpose, make striking features both in spring and autumn, and where planting schemes are being carried out their inclusion should be considered.

Planting.—The greenness of the autumn generally, and the heavy rainfall during the early part of the planting season have seriously handicapped planting operations in many instances, and every endeavour should be made to overtake arrears whenever weather conditions are favourable. If the planting of Roses and deciduous trees and shrubs is not finished, it is better to try and complete the work now than to defer it until the spring, provided conditions are reasonably favourable. Where large specimens have to be transplanted the moving of them can generally be effected with good balls of soil; other conditions are then less important, and the work can usually be carried on well into the winter. The planting and replanting of herbaceous plants may also be carried on right through the present month, when the soil is free of frost. A mulch of leaf-mould or decayed manure is of particular value to all newly-planted subjects.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Renovating Old Fruit Trees.—Standard Apple trees in an unhealthy condition may be brought into a good condition by suitable treatment. Cut out all dead branches and growths that are crossing each other, also remove some of the inside growths to allow light and air to enter the trees freely. All wounds should be dressed with gas tar. If the trees are covered with lichen spray them with alkali wash. Remove all the surface soil down to the roots as far as the branches extend, and apply a heavy dressing of farm-yard manure, or, if this is not obtainable, a fairly heavy dressing of bonemeal, say three or four ounces to the square yard. If the surface soil is exhausted remove it, and substitute good loam or any other rich soil, such as old compost, discarded potting soils and decayed leaf-mould, mixed with freshly slaked lime, at the rate of half-a-bushel of lime to a cart load of soil. Leave the surface soil fairly open; the winter rains will do the rest and all that is needed until the spring, when the surface should be made as firm as possible. The same treatment applies to Pears that are in an exhausted condition.

Plums.—These trees may be treated as advised for Apples in respect to thinning the shoots and the removal of dead branches. It is not so important in their case to open the centres of the trees provided they are healthy. The Plum does not require so much attention to the roots on heavy soils as advised for Apples. A liberal sprinkling of bone meal applied now will help the trees immensely.

Bush Trees.—Apples, Pears and Plums trained in bush form, should have all old, useless spurs and exhausted wood cut away, and the branches thinned where they are crowded. The surface soil should be taken away down to

the roots, as advised for standard trees. Do not use farm-yard manure but before returning the surface soil apply decayed leaves and manure from a spent hot-bed, leaving the surface loose for the winter.

Fruit Room.—All fruits in store need examining with a view to removing any that are decayed. Those that show signs of not keeping should be used first. Keep the temperature of the fruit room even and fairly low and let the air circulate a little by means of the ventilators.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Pot Cherries.—The house in which the earliest batch of pot Cherries is to be grown should be cleansed thoroughly preparatory to bringing in the trees. If the growing shoots were pinched last summer, very little, if any, pruning will be required. See that the drainage is perfectly clear, wash the outside of the pots, and stand each pot on two bricks placed edgewise. Very little water will be required for the first few weeks, and care must be taken when handling the trees not to rub out any of the flower buds. During the first two weeks admit air rather freely when the weather is favourable for ventilating. Fire-heat should only be used to exclude frost and prevent a stagnant atmosphere. Let the trees grow as naturally as possible at all times. Fumigate the house before the buds begin to expand and lightly spray the trees with tepid soft water on bright, warm days, making sure that all in the house is dry before nightfall.

New Pot Fruit Trees.—It is advisable where considerable numbers of pot fruits are grown to purchase and pot a few trees of each kind of fruit annually. By this means the grower is always assured of a good stock of fruiting trees, and this method allows for any trees that are not giving satisfaction to be discarded. After the trees are potted, plunge the pots and protect the buds from birds, etc.

Orchard House.—Push forward the work of pruning, cleansing and training of all trees in cool orchard houses, according to their various needs. Attend to and put in order all fruit borders as the work proceeds, and try and arrange to have the whole of the work finished by the end of the year. This will enable forcing to be commenced in January.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Work in Frosty Weather.—Manure and other fertilising materials, such as leaves from old hot-beds, should be wheeled on to all plots that have been cleared of their crops, when the surface of the ground is hard with frost. In parts of the kitchen garden where the ground is shallow, use old potting compost or any other soil that can be spared to make it deeper. If wheeling on the ground is done in frosty weather very little injury will be caused to paths. If the frost does not become too severe, spread litter in the evening over ground that is to be trenched so that the trenching may be proceeded with the first thing in the mornings. Have all mats or whatever covering material is used ready at hand in case of necessity for protecting vegetables and salads growing in cold frames. Cart fallen tree leaves to as near the spot as possible where they will be required for the making of hot-beds. Stakes should be sharpened and got ready for use, also Pea and Bean sticks, so that no delay will be experienced in the spring when there is great pressure of work in gardens.

Early Potatoes.—If new Potatoes are required early, preparations should be made for planting the seed tubers. If only small quantities are required for succession, the best method is

to grow the plants in pots, which are convenient for shifting from one house to another. If a larger crop is required, grow the plants in frames over a hot-bed of leaves and long litter, but a hot-bed is not necessary if the frames are provided with pipes. The seed tubers should be placed in boxes and sprouted before they are planted.

Celery.—If the weather promises to be very severe, protect the trenches of Celery on the sides with straw or dried Bracken, so that the work of lifting the plants may be made easier.

Herbs.—Lift a few roots of Mint, Chives and Tarragon and plant them in boxes in a greenhouse in order to maintain a supply of young, green growths for use through the winter. Protect Parsley growing in cold frames, during severe weather.

FOR NORTHERN GARDENERS.

By JAMES JEFFREY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Hardy Azaleas.—These hardy spring-flowering shrubs are unrivalled for the varied colouring of their flowers and their fragrance, while in autumn the foliage becomes beautifully tinted. *A. mollis* makes a most effective dot plant when used as such in the rock garden. The Ghent Azaleas are best for grouping or for border decoration, being easily grown and producing a profusion of flowers. Of this section *Aurore de Royghem*, *Bouquet de Flore*, *Glory of Boskoop*, *Mirabilis* and *Nancy Waterer* are a few of the most distinct varieties. In preparing the soil for these shrubs peat and coarse sand should be added in liberal quantities. Should peat not be available, well-rotted leaf-mould will form a good substitute. The planting period may be extended to mid-March. Before planting well-soak the ball of soil and roots by immersing it in water. Very little attention is necessary after planting, except that after flowering all seed pods should be removed.

Salvia splendens.—Large plants of the scarlet Sage should be slightly cut back as they pass out of flower. They may then be placed near the roof-glass in a warm greenhouse to develop young shoots suitable for use as cuttings in early spring. This *Salvia* is readily attacked by red spider, and a close watch should be kept for this pest; spraying with XL All insecticide will keep the young growths free from this insect.

Chrysanthemums.—Where large Chrysanthemum blooms are required the propagation of the plants from cuttings should be commenced during the next few days. The best cuttings are obtained from the base of the plants; growths that are coarse are not to be recommended for the purpose. Root the cuttings singly in thumb pots, and when preparing the pots see that the drainage is ample. The rooting medium may consist of equal parts of good loam and leaf-mould mixed with sufficient sharp river sand to make it thoroughly porous. Pass the whole of the materials through a fine sieve. After the cuttings are inserted water them thoroughly and allow the pots to drain before placing them in the propagating frame or case. The glass covering should be removed each day for a short time, but should be replaced immediately signs of flagging are apparent. A temperature of from 48° to 50° should be maintained in the house during the rooting period.

Gas Lime.—When gas lime is applied to land the latter should remain fallow for so long as possible before a crop is planted. If obtained fresh from the gas works it will be found to be lumpy and should be broken down. Spread it evenly and sparingly on the ground. Gas lime may also be turned to good account if mixed with green weeds and other rubbish that accumulates from the kitchen garden. This compost, if allowed to lie for several months after being mixed, will be of value to ground that needs enriching.

FLORISTS' FLOWERS.

CHRYSANTHEMUM MRS. J. PALMER.

THE accompanying illustration (Fig. 181), shows a small plant of Chrysanthemum Mrs. J. Palmer, a true single, with white florets and a yellow disc. The flowers are of good size, and when fully developed, as shown near the top of the plant, the florets are inclined to droop away from the disc. When in that stage, its appearance is something like that of *Mensa*, but larger in breadth and length of floret. Unfortunately, its lasting quality is not quite so good as that of *Mensa*, nevertheless, it is a good white sort for exhibition purposes.

The largest flowers are five-and-a-quarter inches across, and the plant illustrated carries no flower less than four-and-half inches broad:

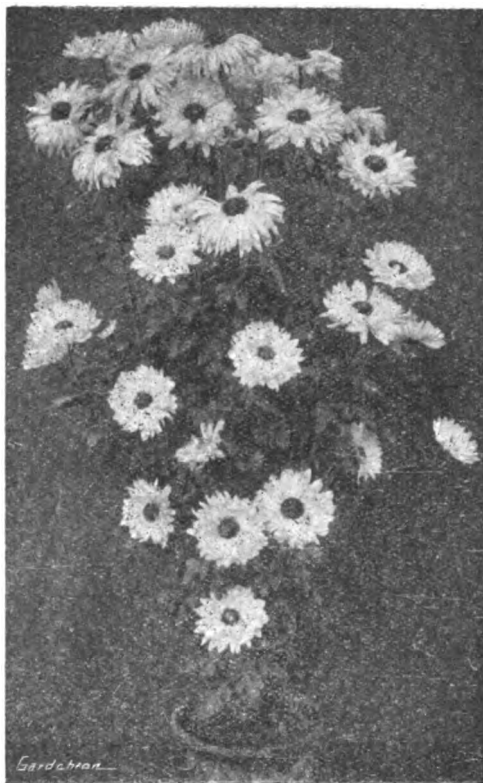


FIG. 181.—CHRYSANTHEMUM MRS. J. PALMER

all the flowers that appear cup-shaped are about half-expanded, but afterwards they become fully expanded like the six upper ones. The plant is carrying thirty-six flowers. Its habit is stiff and erect, and the specimen shown is three feet six inches tall to the top of the highest point; it is growing in an eight-inch pot. We received the plants about the middle of May. This variety received a First Class Certificate in 1923, and was distributed by Mr. H. J. Jones, of Lewisham.

Other good sorts are Mrs. A. B. Hudd, Pink Beauty and Miss Joyce Moore, all of which may be grown in the same way for exhibition or decoration. *Caledonia* and *Isabel Felton* are, I believe, the largest-flowered single varieties in cultivation. *Mark Mills*.

NEW PERPETUAL-FLOWERING CARNATIONS.

THE following varieties of perpetual-flowering Carnations have been registered with the British Carnation Society.

Kathleen Simpson.—A seedling variety raised from *Enchantress* × *Ward*. The flower measures three inches in diameter, and is coloured rich cream shading to apricot.

The fragrance is only slight. The habit of growth and size and strength of the stem are good. The bloom also possesses a good calyx.

Winnie Pointing.—A seedling raised from *Ward* × *Triumph*. The bloom measures two-and-a-half inches in diameter, is of deep cerise colour and slightly fragrant. The plant is very free in flowering, of good habit and develops its flowers on strong, stiff stems. The calyx seldom splits. The plant is said to be very easy to cultivate, and is propagated readily from cuttings. Both these were registered by Mr. A. J. Pointing, Appleton Nursery, Bulpham, via Romford.

Joan Henderson.—A seedling variety with a large, fragrant flower developed on a long, stiff stem. The plant has a good habit and makes strong growth. The colour is dark apricot flaked with crimson. Shown by Lady Brodie Henderson, Epping House, Hertford.

HARDY FLOWERS FOR EXHIBITION.

CONSIDERABLE changes have taken place in the style and character of exhibits of hardy flowers at our leading flower shows since the dawn of the present century, and whilst many appreciate the glorious banks of colour which are arranged at York, Shrewsbury, Wolverhampton, Southport, and at the great Glasgow and Edinburgh exhibitions, others regret that competition in these classes is usually restricted to a few trade specialists. It was not always thus, for in pre-war days the names of Frank Bouskell, Adam Brydon, John Salmon and a few other enthusiastic amateurs frequently took precedence in the prize lists over the nurserymen.

It is contrary to the best interests of horticultural progress, and certainly detrimental to the continued welfare of flower shows, that the private gardener and the amateur should fall out of the ranks of competitors. Whatever may be said in support of the view that "The Trade makes the Show," it is unwise to rest content that hardy flower exhibits should resolve themselves into perhaps three tradesmen's entries in the principal competitive class and a number of non-competitive groups of a miscellaneous character staged with the dual object of securing medal awards and orders for plants.

Schedule committees would be well advised to improve their classification in the private gardeners' and amateurs' sections, and realising the limitations of most private gardens to-day, combined with the costliness of exhibiting, the aim should be to provide classes for exhibits of moderate extent, properly and clearly defined, making the prizes in these classes as liberal as circumstances will permit.

It will be sound policy on the part of the show organisers, and of material benefit to the horticultural trade, to exert strenuous efforts to re-awaken the keen competitive enthusiasm among non-trading growers of hardy flowers, and it would be a judicious investment for the nurserymen themselves to subscribe toward substantial prizes that would draw numerous entries, and so sustain interest among those who are customers. In Scotland such classes are far better filled than in England; that is to the credit of Scotland, and to the reproach of England. It is also true that at many of the smaller local shows in England a class for a half-dozen kinds may be well filled for a total of about twenty shillings in prizes, showing that the spirit survives. My remarks, however, are directed more especially to the shows of national importance, where £8 or £10 should not be considered an extravagant first prize for an exhibit of two dozen vases of hardy border perennials. Competitors in such classes would require to provide themselves with choice and suitable kinds and varieties, for great progress has been made during late years in this class of plants. It is of little use now-a-days to stage the ordinary types of such plants

as *Campanula persicifolia*, *Erigeron speciosus*, or *Galega officinalis*. The ordinary form of *Gaillardia grandiflora* would stand little chance beside a good vase of the variety Mrs. Mackellar, while the choice in *Phloxes*, *Delphiniums* or *Heleniums* would need careful judgment.

There is a considerable difference between selecting the subjects for a class of twenty-four vases and those for a collection of hardy flowers to be arranged for natural effect upon a given area. For the latter, many little tit-bits, single spikes and small subjects may be appropriately worked in to aid and supplement the main features, but in the class for a stipulated number of kinds it is essential, not only that each subject shall be of maximum value, but that it shall help to sustain a well-balanced effect, and agree comfortably with its neighbours. Bearing this in mind when ordering stock, an enthusiast may regulate the proportion of bold spike flowers, light and graceful subjects, solid, massive blooms, and more or less prostrate or spreading plants, the last for the front row.

Another important consideration is colour, and many plants which are individually pleasing may be of little service in a set which embraces too many jarring or difficult colours.

Acanthus mollis latifolius gives an imposing and superb spike which will provide capital corner or centre vases for the back row. Whether it will be available for July or August shows depends largely upon situation, but the flowers last for a long period. *Morina longifolia* is another strong feature when shown in good form and by growing two batches, one in a warm situation and the other in a cool, partially-shaded recess, it may be available for any show between York gala and Glasgow. There are other species of this strikingly handsome genus which should figure more prominently both in gardens and shows. *M. persica* is of taller growth and particularly handsome appearance, whilst *M. betonoides* if of irresistible charm as a foreground subject, its bracteate spikes being of an average length of one foot. *M. Coulteriana*, about the same height, provides a distinct variation in colour for this genus, its flowers being of clear, pale yellow.

Of *Alstroemerias*, *A. aurantiaca* is much better than *A. aurea* because of its more intense colour, but there are several other species and varieties which, if I were judging, would always receive a point or two more than the foregoing because of their unique colours and fantastic pencilling. *A. psittacina* is one of the best, its black markings and bright green tips on a maroon ground being a most unusual combination of rich colouring. Personally, I am fond of *A. chilensis*, but hesitate to advise exhibitors to rely on it because its variability has more than once led to disqualification on the ground that it was a mixed bunch. That is really a reflection upon the qualifications of some judges of hardy flowers, for the real merit of *A. chilensis* lies in the subtle blendings of a wide range of art tints.

Pentstemon barbatus is a fine exhibition flower, but a wise exhibitor will grow a good batch of seedlings and select the finest forms for propagation by division, for there are too many inferior forms in cultivation. Not very many *Campanulas* are really effective when staged under canvas, but one of the very best is *C. lactiflora* var. *caerulea*, if only it is given a fair chance. The correct treatment is either to sow where it may remain undisturbed, except for necessary thinning, or to transplant seedlings while young to permanent quarters. I have seen undisturbed seedlings make very large specimens six feet high, but have never seen a transplanted adult plant show more than half that development.

There are a few varieties of *C. latifolia* which make telling vases, but *C. l. macrantha* and the two hybrids *Burgaltii* and *Van Houttei* are the best of all. These, with the two *persicifolia* varieties, *Telham Beauty* and the double white *Fleur de Neise*, comprise the cream of the genus for exhibition purposes, not, of course, omitting many dwarf kinds which are admirably adapted for rockwork exhibits or for edging groups.

Centaurea macrocephala is one of the finest big yellow flowers for exhibition, and another

remarkably good vase may be made of the clear, rosy-mauve heads of *C. pulchra major*. Few other *Centaureas* are powerful enough for a bold exhibit; *C. ruthenica*, graceful in a decorative scheme does not "mass" in a vase by itself, and the *montanas* are too plebeian except the one large rose-pink variety which Mr. Maurice Prichard shows to fine advantage.

So far as *Coreopsis* is concerned Messrs. Ladham's new *auriculata superba* should oust the ordinary stocks of *C. grandiflora*, but Perry's Double is very useful. The small, delightfully graceful little *C. verticillata* is suitable for a foreground vase, and with intelligent care this subject will do good service at every show from June to September.

The man who can exhibit a good vase of *Ostrowskia magnifica* will be a formidable opponent, but one seldom sees this plant in good condition. Its culture has not, I am convinced, been sufficiently studied by the majority of growers. Briefly, the main points are a sunny situation, and deeply cultivated soil rendered so porous that any quantity of moisture may be applied without stagnation. Once planted, the roots should never be disturbed. The remaining point of importance is that so soon as the flowers are past the roots should be rested by placing a frame-lid over them, but leaving the sides open. The sun, acting through the glass, will provide the necessary dryness and warmth. Early in November the light should be removed so that rains may soak the soil, and plump up the fleshy roots preparatory to resumption of growth. The common error is to allow the soil to remain moist all through autumn and then protect the plant by some covering in winter. The *Ostrowskia* requires no protection from British frosts but does require thorough ripening.

Another splendid exhibition plant—usually for early shows—is *Incarvillea Delavayi*, which needs perfect drainage, abundance of water during the growing season, no disturbance, thorough ripening and feeding with liquid manure so soon as buds begin to form.

Dictamnus albus giganteus gives a noble effect and will remain fresh at the end of three hot days under canvas, but *D. Fraxinella* usually looks flat and dowdy in colour unless the tent is exceptionally well-lighted.

Despite their well-deserved popularity, and undoubted utility in the garden, the *Geums* are not a "strong" subject for the exhibitor to place reliance upon; they have an unhappy habit of hanging their heads, and an exhibitor never knows whether or not they will indulge in that bad habit. I have had Mrs. Bradshaw quite presentable at the close of a three days' show, but on other occasions the flowers have "gone to sleep" during the journey to the show, and steadfastly refused to be roused by any manner of means.

Vastly better are the *Potentillas*, as even though the singles may droop, close up, and look forlorn after a long journey, if unpacked the evening before the show, placed in water for the night they will brighten up, and the opening buds will keep a vase delightfully bright and cheery throughout the week. *Potentilla atrosanguinea*, of which Gibson's Scarlet is a fine form, is one of the most powerful front row subjects one can possibly stage, and in addition to this, an exhibitor may always consider he has strong items if he exhibits the delightfully coloured hybrid *P. Hopwoodiana* or the double-flowered *P. Arc-en-Ciel*, *P. Vase d'Or*, *P. Vulcan*, or *P. Golconde*. A few years ago I managed to make up small vases of these *Potentillas* for use at Chelsea Show in May, and from that week until Holland Park Hall Show, which, if I remember rightly, was held that year during the first week in October, the same stock of plants supplied vases for some show every week. Another front row subject that did the same strenuous duty all through the season was *Pentstemon heterophyllus*, one of the most persistent plants in cultivation and possessing entrancing colour.

Gypsophila paniculata is not a subject for filling a vase on the exhibition table; its business is to provide a setting for other flowers in decorative schemes, and no exhibitor makes

the best of his space who uses it as one among his two dozen or twelve vases. *Gillenia trifoliata*, on the other hand, is always a happy choice, and provides relief from any tendency to heaviness in neighbouring vases, without that undesirable weakness which is inseparable from a broad expanse of *Gypsophila*. The foliage of *Gillenia* is effective and presents an appearance of cool luxuriance which is most acceptable where brilliant colours surround it.

Another disappointingly weak flower at exhibitions is *Statice latifolia*, although an excellent subject in its right environment. *Statice incana coccinea*, however, is quite good, if cut while its bright corollas are fresh and firm. A. J. Macself.

(To be concluded).

HARDY FLOWER BORDER.

ASTER AMELLUS KING GEORGE.

The beautiful Italian Starworts are undoubtedly amongst the most decorative of hardy border perennials, and should be included in all choice collections of border flowers. Clumps lifted in early spring and potted in a loamy compost, or soil taken from a spent Mushroom bed, may be grown as pot plants for the decoration of the cool greenhouse or conservatory, and they are valuable also for cutting.

Aster Amellus King George is one of the best of the family. The bluish-violet flowers are freely produced, well-formed and of large size.

ERIGERON VIOLET BEDDER.

For general decorative effect in bold masses, where colour is desired and for cutting, this dwarf-growing *Erigeron* is extremely attractive. The flowers are freely produced on wiry stems from fifteen to twenty inches long.

This *Erigeron* is suitable for planting in the front row in herbaceous beds or borders; the flowering season extends from July to September. W. Logan.

A LATE ASTER.

It is difficult to define the latest-flowering *Michaelmas Aster*, for climate and locality are important factors in determining the date of blooming. *Aster Shortii*, a North American species, is very late-flowering, and the blooms although small, are very attractive. The colour is the finest soft blue. Fog and rain do not damage the flowers of this variety unless they are very excessive.

This is a most valuable plant for growing in the reserve garden, and removing to positions where late flowers are in request. The species grows from three feet to four feet tall. Dwarf specimens, which have proved of great service for filling in between other subjects, are obtained by taking cuttings in the spring and growing on the plants in rather poor soil during the summer. These latter attain a height of about eighteen inches. They are very serviceable when placed in pots for decorative purposes. C. Ruse.

MAURANDIA BARCLAYANA.

This interesting twining perennial has been singularly lovely on a south wall of a neighbour's garden nearly all the past summer. Even at the time of writing (mid-November) the plants are carrying scores of their pretty violet and white flowers, which are not unlike those of the hybrid *Pentstemons*.

M. Barclayana belongs to the same order—*Scrophulariaceae*—as the *Pentstemon*, and it appears to have been introduced from its native Mexico exactly one hundred years ago. Though better known as a cool-house plant this climber is admirably suited for covering a wall, pillar or trellis, and it is not particular as to soil, though it prefers a good loam with free drainage.

Cuttings may be rooted, but the better way of propagating it is to sow seeds in gentle heat in March, putting the seedlings out in May. There are several varieties in various shades of purple and a pure white sort. A. T. J.

TREES AND SHRUBS.

HYDRANGEA PANICULATA.

(SEE SUPPLEMENTARY ILLUSTRATION.)

THOUGH not so well-known as the popular, pink-flowered varieties of *Hydrangea hortensis*, the subject of this week's supplementary illustration is a more useful hardy shrub for general garden decoration. Whereas *H. hortensis* must be planted in sheltered positions, except in the south and west, and the growths even then are liable to damage by frosts, *H. paniculata*, and the variety *grandiflora*, are quite hardy in the colder parts of the country.

A native of Japan, *H. paniculata* is normally a large, deciduous bush, or small tree, up to twenty feet, sometimes more, in height. When allowed to grow naturally, the panicles of white blossoms are small but freely produced. This *Hydrangea* is most effective and useful for garden decoration, when subjected to fairly hard pruning annually in spring.

The most suitable soil is a good, moderately heavy, fibrous loam enriched with decayed manure and ash from the garden bonfire. February is a good month for planting, but the work may be done at any convenient time between early November and early March.

Each year, towards the end of March, the shoots of the previous year's growths should be cut back to within two or three buds of the old wood. Later, when the young shoots are a couple of inches long, they should be severely thinned. A second thinning, three or four weeks later, is desirable, finally reducing the number of shoots to from eight to twelve or fifteen according to the age and size of the bushes. A mulching of old, decayed manure is beneficial about midsummer, or, failing this, liberal supplies of liquid manure at intervals. This intensive treatment will result in large panicles of white blossoms from twelve inches to eighteen inches long, and nine inches to twelve inches wide. In the typical form, or species, the small, fertile flowers are freely surrounded, or interspersed, with showy, white, sterile blossoms. The flowering season is August and September.

Because of its later flowering the species is even more valuable though perhaps not quite so showy as the variety *grandiflora*: it is fine for beds and borders, and for massing on sloping ground in the pleasure garden. In the variety *grandiflora* the whole of the flowers are sterile, forming a closely-packed, pyramidal panicle of white blossoms. This flowers a month in advance of the type, and in addition to its value in the outdoor garden, is extensively grown in pots for greenhouse decoration.

Cuttings provide a ready means of increase and should be selected from non-flowering shoots about midsummer and onwards: insert them in sandy soil in a close frame, preferably with a little bottom heat. A. O., Kew.

RHODODENDRON CYNTHIA.

RHODODENDRONS are well-known for their effectiveness when in flower, their huge, handsome trusses being very striking, no matter how or where produced. Among the many varieties in commerce, of which this remark is pre-eminently true, is the subject of this note, *Cynthia* (Fig. 182), a rosy-crimson flowered variety of distinctly handsome shape, and with handsome foliage. *Cynthia* is a mid-season variety.—C. T., *Amptill Park*.

MAGNOLIA GRANDIFLORA.

THIS handsome wall shrub, with its large, glossy-green leaves, and big, pure white, fragrant flowers, is always much admired. The plant has a reputation for slow growth, and during the first few years after planting it makes comparatively little headway. When once established in a good rooting material, however, growth is rapid, as a specimen on the mansion here demonstrates.

The tree in question was planted in 1908, and has already reached a height of twenty-eight feet. During the present season the huge white flowers were borne with remarkable freedom over the whole area of the plant. W. Auton, *Pyrford Court Gardens, Woking*.

BULB GARDEN.

SCHIZOSTYLIS COCCINEA.

THE true value of this South African bulbous plant is most fully realised when the first touch of frost has ended for the season most of its rivals in the border, and when such plants as Dahlias and Gladioli are only a memory, for the Kaffir Lily displays its scarlet flowers during the dull, short days of November and December.

This plant is not damaged by a few degrees of frost, and continues to open its flower buds quite freely in a low temperature; even if the already expanded flowers have suffered, the first sunny day brings out others of most vivid colouring. If the flowers are required for vases, it is advantageous to pick the spikes when the first blossom has developed, and place them in water in a warm room, where they soon respond to the more congenial conditions, and rapidly open the rest of their flowers.

A few clumps lifted and potted when the flower spikes are first showing make a valuable addition to the cool house during winter, for

of the hybridist in evolving Tulips in every lovely combination of colour and beauty of form, are his efforts, where this particular flower is concerned, really superior to the forms which Nature has evolved alone? Judged even by the exacting standards of the best Dutch or English nursery, are such exquisite things as *T. Oreigii* with its glowing red flower and maculated foliage; the lovely Cretan *T. saxatilis*, with its bright lemon base to a rosy lilac cup, enclosing chocolate-coloured anthers; the dazzling *T. Tubergeniana* and the graceful, striped *T. Clusiana*; *T. Kaufmanniana*, appropriately named the "Water Lily Tulip"; that brilliant giant from the Caucasus, *T. Eichleri*, and the lovely *T. dasystemon*, with its cluster of cream and yellow flowers—are these gems from Nature's work shop, to name only a few species out of dozens, really "comparatively unattractive," or in any way inferior to the varieties which we owe to "recent cultivation"?

Possibly, in the course of his scholarly research, Mr. Friend has hit upon some clue which throws new light upon that difficult question, the origin of the garden Tulip? *Christopher Sandeman, El Palacio, Jerez-de-la-Frontera, Spain.*

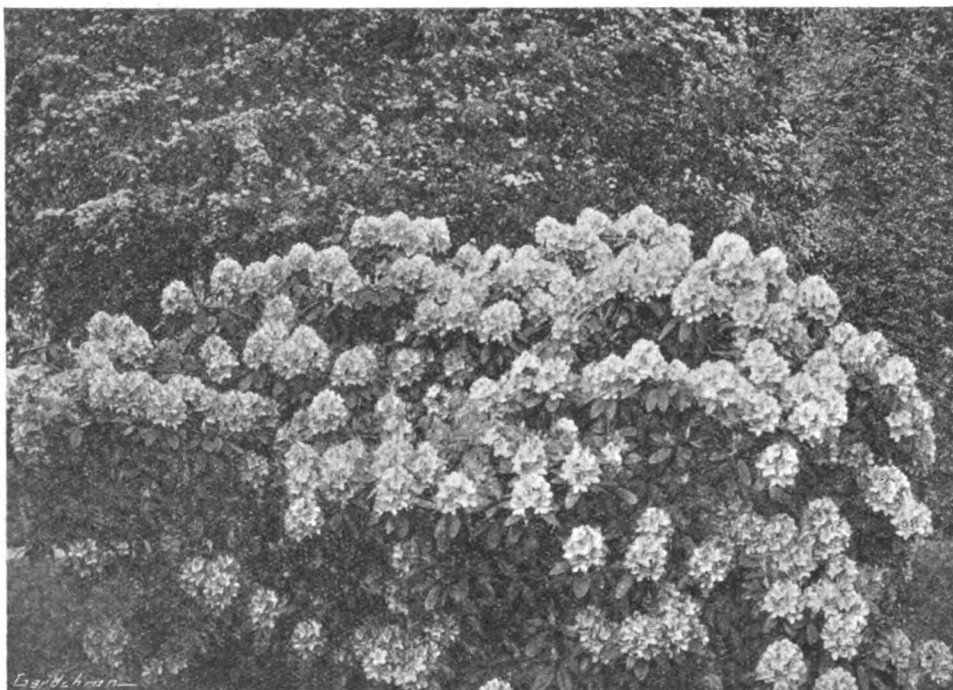


FIG 182.—RHODODENDRON CYNTHIA.

the flowers remain in good condition for several weeks. They may be planted out again the following spring to form another bed.

The pink variety *Mrs. Hegarty* originated in an Irish garden, but it is not plentiful yet, and while waiting for its wider distribution I am quite content with the type. A. T. H.

THE ORIGINAL TULIP.

In his interesting article on "The Garden in Antiquity," in your issue of November 14, Mr. Hilderic Friend writes: "... late flowers we so greatly admire owe very much to recent cultivation. The original Tulip, for example, was comparatively unattractive." What was "the original Tulip"? Admitting the hypothesis that garden varieties which we grow to-day have been mainly derived from *T. Gesneriana* and *T. suaveolens*, neither is an original wild species, and previous to their introduction from Turkey into western European gardens about the middle of the sixteenth century, I have always been under the impression that nothing is known of the ancestry of Tulips cultivated in the east.

But I take it that by "the original Tulip" Mr. Friend means natural species as compared with garden varieties? While admitting with gratitude the amazing skill

PUBLIC PARKS AND GARDENS.

I HAD the pleasure, on a recent occasion, of inspecting the Chrysanthemums at Brynmill Park, Swansea. The plants are stored in a large, span-roofed conservatory, and there were many excellent blooms. The arrangement was different from the method frequently employed, of disposing the plants as regularly as the units in a regiment of soldiers, and the result was most pleasing. The collection, included most of the leading Japanese varieties, and each sort was arranged in groups of five or six plants marked by a neat printed label above the group. I heard many favourable comments concerning this method of displaying the plants. A pleasing edging was formed by a row of the white decorative variety, *Blanche Poitevine*. Japanese varieties that impressed me as being especially meritorious were: *Mrs. George Monroe*, Junr. (crimson), *Peace* (sulphur), *Mrs. Spencer Chichester* (yellow), *Victory* (flesh-pink), *Mona Davis* (pink), *Louisa Pickett* (white), and *Golden Champion*. Mr. D. Bliss, the Parks Superintendent, is to be congratulated on his achievement in providing such a beautiful floral feast for the inhabitants of the town. *Geo. H. Copley, N.D.H.*

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be written on one side only of the paper, sent as early in the week as possible, and only signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.*

XXI.—THROUGH THE GORGE OF THE TSANGPO.

GYALA stands on a terrace, or rather a series of terraces, where Wheat, Pulse and Buckwheat are cultivated nearly 150 feet above the river; but our path led us up and up till we had ascended some 1,000 feet above Gyala before descending to cross a torrent. Then we climbed again, still higher. At this point, for a distance of two or three miles the river flows smoothly. A short distance below Gyala, however, it breaks into furious rapids, and coming up against a huge cliff, starts on a zig-zag career through the Himalayan barrier. It was on account of this cliff that for the first two days we had to climb, till at one point we must have been 2,000 feet above the river.

At first we were in Pine forest, which was replaced at higher levels by Bamboo-Conifer forest, the Conifers being *Pinus Armandii*, *Tsuga* and *Picea*, with scattered Larch. The only broad-leaved trees were Maple and Birch, and on more exposed slopes, amongst Bracken and various shrubs, occurred copses of Poplar; in the Pine forest also were a few evergreen Oaks.

The only *Rhododendrons* seen were such as grow in the Pine forest, namely, the mahogany 'Triflorum,' the 'Lepidotum' (probably *R. Baileyi*), and an occasional 'Taliense.' The deep, stony torrent was lined with bushes of *Hippophaë*, above which grew a wall of Bamboo.

On November 17, we continued the ascent, and on a very steep, stony slope close beside a sulphur spring, I found the first new *Rhododendron* (numbered W. 6273). It formed small, wiry bushes, growing in company with both the 'Lepidotum' and the 'Triflorum,' either amongst the Bamboos, or on cliff ledges. Beyond the fact that it is allied to the epiphytic, K.W. 6,250, I am at a loss to describe it in terms of any familiar species, though later I found one or two other closely allied species, mostly

epiphytic. It is characterised by its leaves, lepidote below, with long, marginal hairs; dome-shaped capsule, with large, persistent calyx; and usually three-flowered truss. The buds also are typical, the maroon scales having a white margin; they remind me, in fact, of the bud scales seen in Lady Alice Fitzwilliam—or even in *R. Edgeworthii*.

The exposed slope was now covered with a dense growth of mixed shrubs, including species of *Piptanthus*, *Caragana*, *Salix*, *Cotoneaster*, *Rhododendron*, *Berberis*, etc. Later, we got into *Picea* forest, where the undergrowth consisted of *Viburnum*, *Podophyllum*, *Rodgersia*, *Spiraea*, etc., with an occasional tall spike of *Lilium giganteum*, and on the rocks, the closely-wrapped, mealy sprouts of a 'Petiolaris' or a 'Sonchifolia' *Primula*. The forest was crammed with thickets of 'Grande' *Rhododendron*, rather prone to a sort of Witches' Broom; but this plant, like the large-leaved 'Grande' of Pemako, referred to in the last chapter, had not flowered at all this year, since there was not a single capsule to be seen. Some of the trees were forty feet high, with trunks four feet

Rhododendron forest of which we had reached the fringes at the highest point touched, soon gave way to 'Grande' forest, and that in turn to Bamboo forest. Scattered through this latter were some immense *Picea* trees, which we estimated to be 200 feet high, unbranched for 100 feet or more, their trunks as straight as a dart, and eight feet in diameter near the base. We awoke on November 18 to find it snowing fast, and in the course of a short march descended to the river, where amidst great boulders and piles of rubbish fallen from the cliffs above, grew Alder trees, *Ilex*, and the first 'Arboreum' *Rhododendron* yet met with. A great variety of shrubs grew in this more open forest, which was nevertheless involved in a tangle of creeping and climbing plants. In flower were *Clethra* sp. and a rather pretty *Ligustrum*, and bunches of the bright, scarlet berries of a Deadly Nightshade hung over the thickets. Many tree trunks were covered with Ivy, and a variety of untidy, scrambling bushes, such as *Lonicera* (clusters of erect, black berries), *Deutzia* and *Rubus* added to the tangle.

We camped under a huge cliff close to the

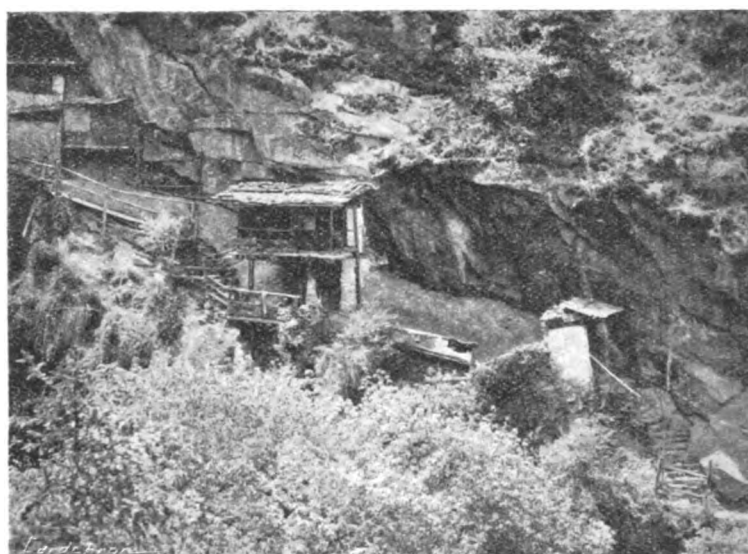


FIG. 183. CLIFF GALLERIES AND PRIEST'S CELLS. TIBET.

in girth at three feet from the ground, though they rarely grew strictly erect.

We continued to ascend, and after climbing a high ladder set against the cliff, reached the shoulder of the great spur which had long blocked the view down the gorge. Unfortunately, we could see nothing, for a snowstorm was in progress, and the dense *Rhododendron* forest in which we now found ourselves was smothered in snow. This forest must be a wonderful sight in the early summer, for there were many species including the pink 'Campylocarpum,' the rose 'Thomsonii,' the plant with hairy petioles (here a tree over twenty feet high), and a new 'Triflorum.'

The cliffs were extraordinarily steep, and the descent on the other side of the spur difficult in consequence. It was nearly five o'clock when the vanguard reached a deep glen lined with Larch, Maple and Bamboo, where water flowed; and there we had to camp on the precipitous slope, making forms for ourselves under the Bamboo clumps. By nightfall, there were half-a-dozen fires crackling in the dark forest, for there was nowhere room to seat more than four or five round a fire, huddled together against the drizzle.

That we were already in a much wetter climate was obvious, not only from the continuous forest, but from the quantity of moss which clothed the trees, the greater variety of Ferns, the number of woody climbers, and other signs. Meanwhile, the dense, mixed

bouncing river whose thunderous roar filled the gorge with noise. The cliff was covered with *Rhododendrons*, two species of the 'Virgatum' series, *R. vaccinioides*, and a bush with rather large, coarse leaves, rustily lepidote below, and fat, wooden capsules in threes. The last obviously a 'Maddeni' rather like *R. Maddeni* itself, is one of the commonest species in the gorge, wherever the forest permits anything else to grow—in fact, all four species are abundant on the river cliffs and in rocky places and poor soil, driven out into the open, or up the trees (in the case of *R. vaccinioides*) by the eager, all-conquering forest. It is a species with which I am not familiar, though I saw it again in Bhutan (so far as I could judge the two species in fruit), on the southern flanks of the Himalaya, three months later. Also I recollect having seen a very similar looking plant near the sources of the Red River in Yunnan a few years ago, but nowhere have I seen it in flower.

The temperature only fell to 40° in the night, so there was little hope of fine weather. The clouds came rolling like smoke through the gorge, sucked up from the drenched jungles of Pemako and showers fell from time to time, keeping the forest ever fresh. We had a complicated march climbing over the spurs and staggering boulders in the bed of the river. I counted twelve species of *Rhododendron* this day, including an 'Erratum' with bright scarlet flowers (K.W. 6,284); another scarlet-flowered species confined to swampy ground

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, August 15, September 5, September 19, October 10, October 24, and November 21, 1925.

in the forest (K.W. 6,285); and a queer species with rugose leaves, like those of *R. megacalyx*, a Burmese species, or of the well-known *Viburnum rhytidophyllum*, and loose three- or four-flowered trusses, the capsule being large, globular and enclosed by a still larger, persistent leafy calyx. This striking species, nowhere abundant, grows on the steepest gneiss cliffs, scattered amongst more widely distributed species, or occasionally on boulders at the edge of the forest in the river bed (K.W. 6,286).

Even more surprising was it to find on a steep, grassy slope close to the river, and no more than 8,000 feet above sea level, a dwarf *Iris* in fruit, which from the description of the capsule Mr. Dykes thinks may be one of the 'Ensatas.'

Cawdor descended 1,000 feet to the river, I climbed the cliffs to explore the sub-alpine region. There are swamps all round the monastery, partly overgrown with dense thickets of Barberry, *Cotoneaster*, swamp *Rhododendron*, Alder, *Lonicera*, *Ilex*, etc. From the edge of the swamp the cliffs rise very steeply, scored by water courses, up one of which I climbed. By the time I had climbed 1,000 feet I came to such a jungle of *Rhododendrons*, matting the precipitous, sheltered face of the cliff, that further progress became impossible. I did, indeed, struggle up another hundred feet or so, scrambling on the tops of the *Rhododendrons*, so thickly did they grow; but I soon gave that up, exhausted, though not before. I had secured seed of a strange 'glaucum'-like species, and

found growing on trunks which have lain long in the forest, but only on those recently fallen.

We now reorganised our party for the difficult stretch of the gorge, it being our intention to explore, if possible, every mile of the river, in order to settle the question of the falls. Our guide estimated the journey to the next village at eleven or twelve days. We sent three porters back, keeping twenty, with rations for fifteen days. Dick was to remain at Pemakochung for a week collecting *Rhododendron* seed, and then return to G'ala and take the heavy kit to Tongkyuk by the main road; while we, with Tom and our guide, pushed through the gorge and rejoined the main body at Tongkyuk early in December. As it turned

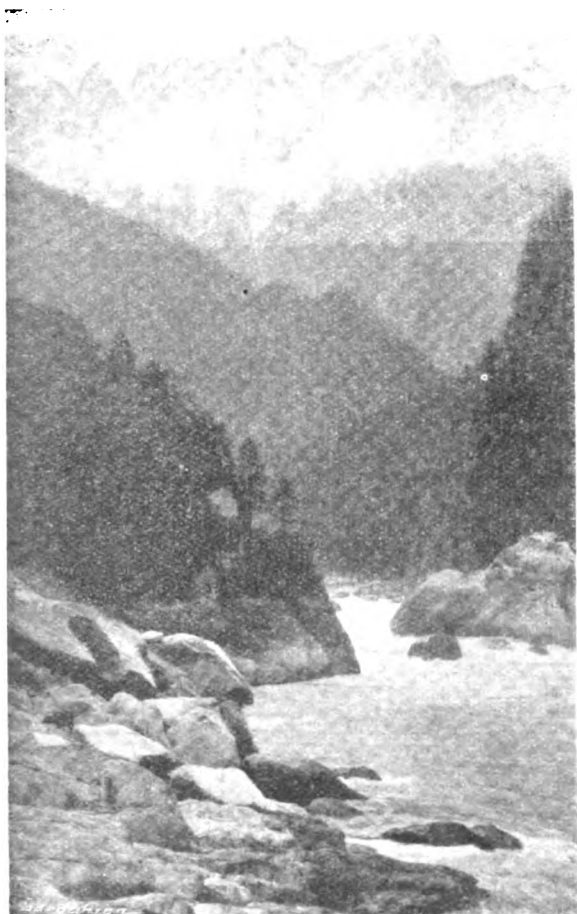


FIG. 184.—IN THE GORGE OF THE TSANGPO.



FIG. 185.—FORESTED GORGE OF THE TSANGPO.

In the open forest, a cream-coloured *Clematis* was in full bloom. The forest was growing more varied each day, but it was temperate forest, and largely Coniferous, with a heavy undergrowth of *Rhododendron*, now growing right down to the water's edge in great variety. The big trees were *Tsuga*, an occasional *Taxus*, and evergreen Oak, the last-named of large size; one I measured was sixty-six inches in girth at four feet from the ground. The commonest *Rhododendrons* were the 'Irroratum' and the 'Arboreum,' with several small epiphytic species.

On the fifth day from G'ala we reached the little monastery at the foot of Namcha Barwa, called Pemakochung. So far, we had followed a respectable path and had covered six or eight miles a day. Henceforth, we would have to cut our own path through the thick forest, and progress was reduced to about three miles a day, the precipices causing us a lot of trouble.

We spent a day at Pemakochung, and while

of an aromatic shrublet which might have been a 'Campylogynum,' but for its very short pedicels and solitary flowers. The most sensational species, however, was a large-leaved 'Campylocarpus' with persistent bull scales which gave to the stems a curious shaggy appearance; but of this I saw no fruits. Other species in this 'Rhododendron complex' were a slender shrub with typical 'Edgeworthii' foliage; a small 'Anthopogon'; the 'Virgatum'-like No. 6,278, with its flopping branches, peeling bark exposing a copper-red stem, and numerous compact seven-flowered trusses; the common mauve-pink 'Glaucum'; a 'Souliei'; the bristly K.W. 6,256; and several more. A little lower down in the forest grew the big-leaved 'Grande,' and another 'Grande,' the 'Arboreum' and 'Irroratum,' the slim 'Heliopsis,' and the common 'Triflorum,' also stout trees of the pink 'Thomsonii,' together with several epiphytic species. These last usually grow rather high up, and are difficult to get except from fallen trees; nor are they

out, we reached the trysting place twelve days late, and fears were entertained for our safety. But or that more anon.

The weather was far from settled, and the snow peaks, on which we had to rely for our position, were generally invisible. Still, we had fine days and a certain amount of sunshine. The river was low, the coolies in good spirits, and we ourselves confident of success, so that when we started again, on November 22, we anticipated a swift triumph.

It will easily be understood that though it is not difficult to give some general idea of the flora, in the course of a march like this, travelling without tents or ordinary comforts in all weathers with only a rough bivouac at the end of a strenuous day's climbing, it was impossible to make large collections, or to get more than a passing glimpse of the infinite variety of vegetation met with. But the fact that progress was so slow enabled me to botanise leisurely as we went along, while Cawdor looked after the transport. F. Kingdon Ward.

MESEMBRYANTHEMUM.

(Continued from page 433).

CONOPHYTUM, N. E. Br.

VERY small perennial, succulent, tufted plants, usually stemless, but a few species develop short stems with age, with the growths crowded into a clump. Roots very short. Each growth consists of a small, fleshy body, obconical, globose, ovoid, oblong, or sub-cylindric in shape, formed of two opposite leaves fused into one body, and convex, flat, depressed, notched or two-lobed at the top, with a small orifice resembling a closed mouth at the centre or between the lobes. Flower solitary, growing up from the interior of the growths through the central orifice. Calyx with a distinct elongated, slender, membranous tube above the ovary, four-to-six-lobed at the top, included in or partly or entirely exerted from the orifice. Corolla with a distinct slender or funnel-shaped tube as long as or longer than the calyx-tube, and usually numerous, sometimes few lobes or petals, spreading or recurved, in one to several series, the inner series at the mouth of the tube in some species smaller and differently coloured

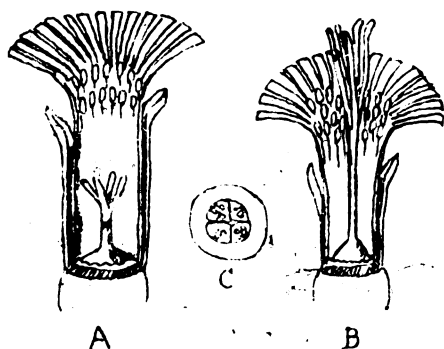


FIG. 186. CONOPHYTUM.

Diagrams of floral structure with ends of petals cut off. (A) *C. petraeum*; (B) *C. bilobum*; (C) Section of ovary, showing placentation.

(staminodes?). Stamens, few or many, erect included in or partly exerted from the corolla-tube. Style, long or short, rarely nearly or quite absent; stigmas four to six, filiform. Ovary inferior, flat or convex or conical at the top, with a crenulate ring of connected glands at its margin, four-to-six-celled; placentas on the floor or outer wall of the cell. Capsule small, with four to seven valves and cells; valves with a central expanding-keel continuous with the cell-partitions; cells open, without cell-wings or tubercles. Seeds minute, ovoid, with a nipple at one end, smooth.—N. E. Brown, in *The Gardeners' Chronicle*, 1922, vol. LXXI, p. 198.

Species numerous, all natives of the Karoo region of South Africa, ranging from Great Namaqualand southward and eastward as far as Oudtshoorn Division, but at present not known to extend beyond those limits.

The name is derived from the Greek *konos*, a cone, and *phylon*, a plant, in allusion to the shape of the growths, which in most of the species is like an inverted cone.

Many of the species expand their flowers at the close of the day or at night, closing again in the morning, and when their flowers are white, cream-coloured and yellowish, they always have very narrow or linear-filiform petals, but when the petals are pink or magenta they are usually much broader. Those that expand their flowers in the day-time always have broader petals than the night-flowering species, irrespective of colour. Why is this? Why do day-flowering species need to make themselves more conspicuous than those that flower at night? Some of the night-flowering kinds are scented, but so also are some of those that are day-flowering, so that a difference in the attraction of odour does not seem to explain the problem. I know nothing of how or by what insects these plants are fertilised, but from observations made in my own greenhouse,

I am inclined to believe that mites, thrips and similar minute insects are among the chief agents.

In my original description of the genus at the place above quoted, I described the cells of the capsule as "with or without cell-wings." This is an error, based upon the fact that the capsule of the plant I described as *C. pilosulum* has cell-wings, but I had not then seen a flower of that species, only a photograph of it, which is useless for structural details. Last year, however, the plant flowered at Kew, and Dr. J. Muir has this year sent flowers of it to me from South Africa, and now that I have been able to examine its blossoms, I find that the floral structure of *C. pilosulum* is quite different from that of *Conophytum*, and identical with that of *Gibbaeum*, and the important character of the presence of cell-wings also agrees with the fruit-structure of that genus, under which this plant will be found enumerated hereafter. The appearance of the plant, however, is so much like that of a *Conophytum*, that I think no one would have suspected that it did not belong to that genus. But it also possesses another character that should have warned me, for in place of the very short fibrous roots characteristic of the genus *Conophytum* it has the deeply descending rootstock characteristic of the genus *Gibbaeum*.

It was not until some time after my last article on these plants, in *The Gardeners' Chronicle*, 1922, vol. LXXII, p. 124, was in type (but not published) that I was informed by Mr. G. Schwantes that he had published several species in the *Monatsschrift für Kakteenkunde* after the war, and he very kindly sent me copies of his articles, for no copies of this work published after the war began, was contained in the Kew Library until the spring of 1922, long after my account of the genus was in type, so that until then I was quite unaware that any other species had been published belonging to the groups I have dealt with, other than those I have enumerated. As some of Mr. Schwantes' names were published at an earlier date than my own, a few changes of nomenclature are necessary. These changes I have made in the following enumeration, and have also added some further references, as well as descriptions of some new species, thus bringing the account of the genus up-to-date. The species are arranged alphabetically for convenience of reference, but numbers are added to indicate their position in the arrangement adopted in my previous account of the genus.

Although several new species have been described by German authors, they do not recognise this genus as distinct from *Mesembryanthemum*, nor do they describe the structure of the flowers and fruit.

In correspondence about these plants some writers have mentioned that the surface of many of these plants when viewed with a strong lens is seen to be covered with minute whitish dots, which I have not mentioned in my descriptions. The reason I have not done so is because these minute specks are the stomata of the plants, which it is unnecessary to mention.

Those who are interested in the microscopic structure of plants will find the epidermis of these species very interesting to study.

As stated in *The Gardeners' Chronicle*, vol. LXXI, p. 198, these plants are wanting in characters that can be set down in writing in definite terms, and are, therefore, scarcely to be identified from descriptions alone, and, unfortunately, owing to the illness of my daughter, I am no longer able to illustrate these articles by the aid of her excellent photographs, that often had to be made between 8 and 10 p.m., by gaslight, as many species only fully expand their flowers at night. But as an aid to the identification of the new species I have seen, I have indicated under each the type of form assumed by the growths when viewed sideways, as indicated in the outline sections (Fig. 187) reproduced from my former article in *The Gardeners' Chronicle*, vol. LXXI, p. 214.

The difficulty of naming these plants correctly is very great, as is clearly evidenced by the fact that at the horticultural shows where I have seen them exhibited, I have noticed that the

names are rarely correct, and continental nurserymen are selling some species with my names attached to them that are by no means correct. As an example, I have seen a plant bought from a continental dealer as being "*C. pictum*, N. E. Br.," which it certainly is not, but appears to be *C. signatum*, N. E. Br. Another I have seen bears the name "*C. cibdelum* N. E. Br." In the first place, it is a mystery to me how the dealer could have possibly obtained this name, for it has hitherto remained unpublished, existing only in my own manuscript, and I have never distributed any portion of my plant, so far as I am aware, under that name, nor have I so named a plant for another person. Secondly the plant sold under the name "*C. cibdelum*" is not at all like the plant I have so named, and which will be found described below. I possess the plant, and think it probable that it may be a variety of *C. vagum*, but until I am able to compare its flowers I cannot decide.

I have mentioned this because it indicates how very difficult it is to name these plants from description. Unfortunately, as previously

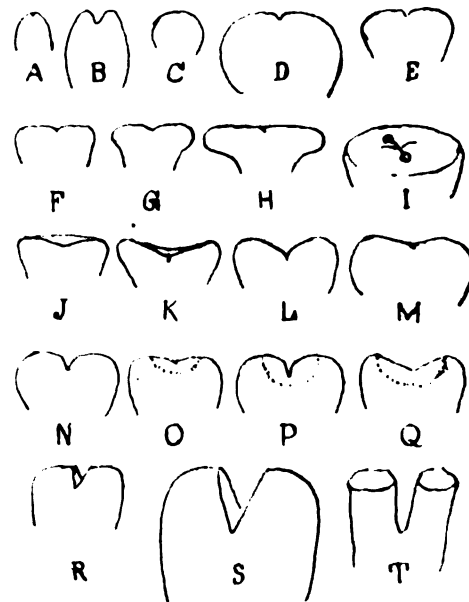


FIG. 187. CONOPHYTUM.

Outlines of Sections of types of growth.

stated, I have found it impossible to make a workable key to the whole of the species, but I have compiled one to the little group to which *C. bilobum* belongs, from which I think the species of that group at present in cultivation may be determined. And I have separated the newly described species that belong to that group, and have placed them after the key at the end. Descriptions of the older species of the group will be found in vol. LXXII, pp. 83 and 124.

For the cultivation of these and allied plants I am now making trial of some porous pots without a hole at the bottom, manufactured by Mr. R. T. Dick, of Newlyn, Penzance. Under natural conditions these plants get little or no rain, for long periods and it is clear that they must obtain the moisture they require from another source. I think it probable that the plants and the stones and rocks among which they grow, cool down at night and condense sufficient moisture for their requirement. But under cultivation the problem is to give them the right amount: the watering of them is a fine art. If kept dry too long, the root tips die, and when watered often, rot, and the plant is killed. And if too liberally watered, especially at the wrong period, they may also rot and die. These porous, holeless pots may therefore absorb and retain sufficient water to prevent the roots from dying completely, and at the same time allow any surplus to evaporate and so prevent rot. I will report upon the result of the trial I am making when I treat of the general cultivation of these plants. At present, it may suffice to say that the species

of this genus flower and make their growths in this country between August and January, and from May to near the end of July they go to rest. During their resting period they require very little water, but when growing and flowering they should be watered freely enough to keep their roots active, otherwise they do not flower well.

39a.—C. advenum, N. E. Br. Growth small (type E.), 2–4 lines high, 2–3½ lines broad, and 1½–2½ lines thick, obconically obovoid, slightly notched at the convex top, which in end view is also convex or faintly ridged; orifice, ½–1 line long; surface smooth, glabrous, grey-green, suffused with purple on the sides under continued sunshine, and either marked with a line of connected dots over the top transverse to the orifice and numerous other separate scattered dots, or only with irregularly scattered dots of dark green or purplish-brown, and the orifice outlined with similar confluent dots. Flowers not seen. Montague

point of union of the arches towards the centre of the orifice, and with a few dots or irregular lines outside the arched lines, and the orifice outlined with a few separate or confluent dots, all of dark green or purplish. Sometimes when exposed in the open air to continuous sunlight, the whole top surface becomes more or less thickly covered with purple confluent dots, hiding the other markings, possibly the effect of cold nights. Calyx 4–5-lobed: tube 1½–2 lines long, more or less exerted; lobes oblong, obtuse, reddish. Corolla, 7–10, lines in diameter, expanding at night, scentless, tube 2½–3½ lines long; petals 4–5 lines long; very slender, whitish. Stamens many, in about three series; anthers of the upper series exerted, milk-white. Style ½–1½ lines long; stigma 4, much shorter than the stamens, 1–1½ line long, filiform, whitish.—*M. assimile*, N. E. Br. in *Journ Linn. Soc.* vol. XLV, p. 92. South Africa; locality and collector unknown.

This species was accidentally omitted from my descriptions of the species in my former articles

these plants fill up their allotted space. It is, however, when arranged in groups that the Pampas Grass is seen at its best. The illustration (Fig. 183), showing a corner of our grounds, gives an idea of the effect produced by a selection of these plants growing together.

This year, the flowering plumes have been exceptionally good, showing that the season just finishing has been favourable for their growth. It is rarely that the rosy-plumed varieties show their distinct colouring so effectively as they have done this autumn, and in this respect the variety *Roi des Roses* has been very markedly bright.

A useful selection of white-plumed varieties consists of *Gynerium argenteum*, *G. Bertinii*, *G. elegans*, *G. monstrosum*, and *G. pumilum*. The rosy-plumed section should include *G. Gloire de Museum*, *G. carmineum*, *G. Louis Carriere* and *G. Roi des Roses*. Amongst the variegated kinds *G. aureo-linearis* is worthy of a place in every collection. *James Mac-Donald, Harpenden.*

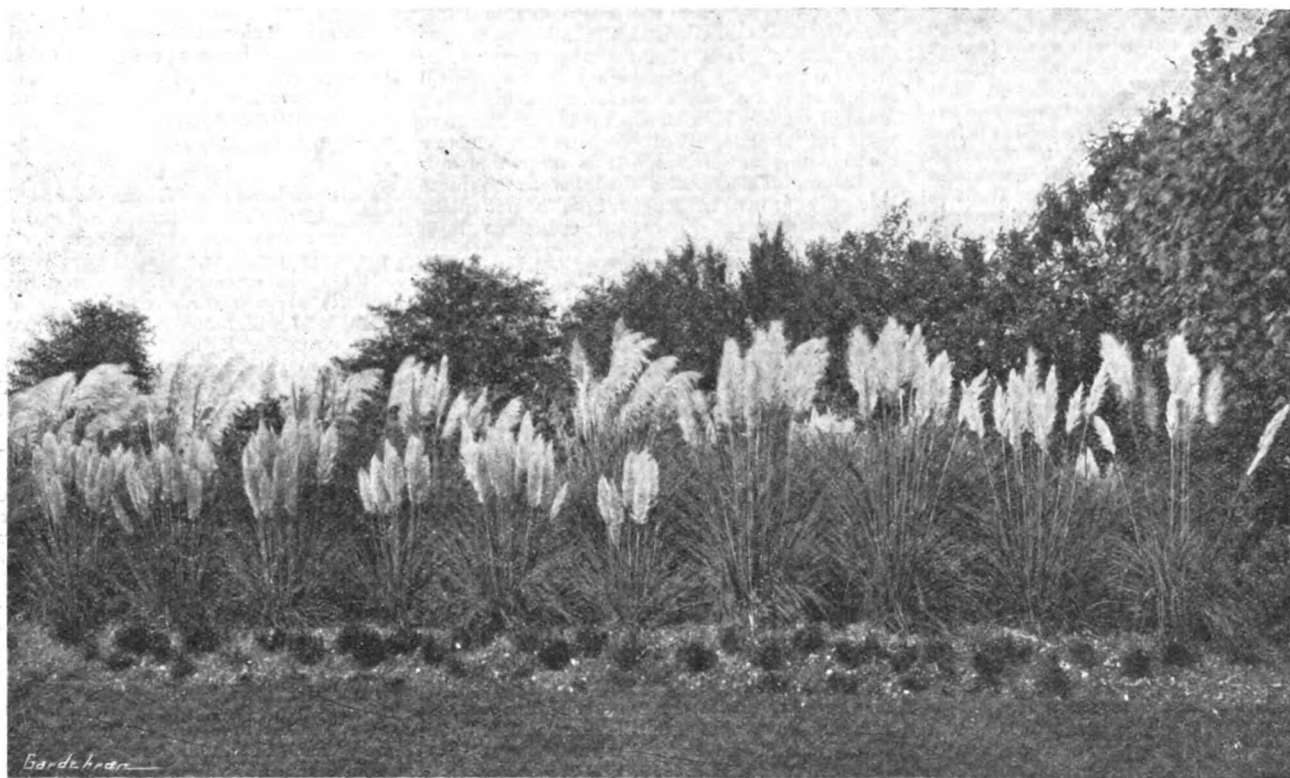


FIG. 183. A GROUP OF PAMPAS GRASSES.

Division; locality not stated, Mitchell I received this small species from Professor H. Compton in 1919, but it has not yet produced flowers with me.

15c.—C. Angelicae, N. E. Br. Growth small, 3–4 lines high, 1½–2½ lines broad, obconic, more or less circular or very broadly elliptic at the truncate top; orifice about ½ line long; surface green, marked with some elevated branching pale green lines. Flowers unknown.—*Mesemb. Angelicae*, Dinter and Schwantes in *Zeitschr. f. Sukk.*, vol. II, p. 27 (1925). Great Namaqualand; Eendorn, near Warmbad, Dinter. I have not seen this species.

40a.—C. assimile, N. E. Br. Growth 5–7 lines high, 4½–6 lines broad, and 3–5 lines thick, obconic, elliptic in outline and slightly notched on the top (type O), with the lobules on each side of the notch convex in side view; orifice 1–1½ line long, depressed; surface smooth, glabrous, greyish-green, or, in dull summers, dull green, under continuous sunlight often purplish on the sides, and the top usually marked on each side of the orifice with two arched lines of confluent dots, with or without a row of two-four dots proceeding from the

in *The Gardeners' Chronicle* where it should have been found place in vol. LXXII, p. 54.

N.B.—In the key to the genera published on p. 413, at the top of column one, the paragraph "From 13. Plants all with distinct erect, ascending or spreading leaves (to the end)" has been misplaced in the make up and should be transposed to immediately before the paragraph numbered 18. The plants dealt with in the paragraphs numbered 14–17 all have their leaves more or less combined into a solid body, not separate, as is stated in the first of the coupled paragraphs numbered 13. *N. E. Brown.*

(To be continued.)

THE PAMPAS GRASS.

DURING autumn the Pampas Grass is one of the most striking objects in private and public pleasure grounds, as its noble plumes stand out with vividness against the pleasing autumnal tints of our trees and shrubs. It is generally planted as isolated specimens, and very nobly

GARDEN NOTES FROM SOUTH-WEST SCOTLAND.

THERE is no genus of hardy flowering plants cultivated in British gardens that contains species so widely differing from each other in habit of growth and general appearance as the Knotweeds—*Polygonum*. Among the eleven forms distinguished as species indigenous to Great Britain the family likeness is so strongly marked as to ensure their ready recognition as Knotweeds, none of them, except *P. Bistortia*, being worthy of a place in the flower border.

But the range of the genus is world-wide, and the diversity of form among exotic species is truly astonishing. Compare, for instance, the lowly *P. vacciniifolium* which, clinging closely to the rocks, conceals its neat foliage in autumn with crowded spikes of clear pink flowers, suggesting some delicate form of Heath, with the rampant *P. baldschuanicum* from Bokhara or *P. Aubertii* from western China, whereof the climbing stems will grow eight or ten feet in a single season, bearing a profusion

of feathery panicles, the former of white, the latter of pale pink, flowers.

The Ginkgo, or Maidenhair Tree—*Ginkgo biloba*—does not agree with our western climate; it grows, but not with the luxuriance it displays in sunnier climes. Feeling dissatisfied with the somewhat hungry appearance of a Ginkgo, some twenty feet high, I popped in a piece of *Polygonum Aubertii* at its foot two years ago and forgot all about it. Last August I happened to pass that way, and lo! the Ginkgo was decked to its very summit with plumes of pinkish flowers. It looked exactly as if the tree had burst into profuse bloom.

In the matter of contrast what two plants of the same family could be more dissimilar than the stout, arching eight-foot stems of *Polygonum sachalinense*, waving huge, cordate leaves in the breeze, and the wiry two-foot rushes of *P. equisetiforme*, studded with a few closely adpressed leaflets, and set with scattered tiny white stars in autumn?

The said *P. sachalinense*, handsome though it be, must on no account be admitted into the garden, nor for that matter, within pistol shot thereof; for it possesses a fine sense of the neighbourhood of rich soil, as well as the faculty of travelling subterraneously towards it. *P. polystachyum* is equally dangerous in that respect; once let it get into the borders and it is well-nigh impossible to evict it. But it is a lovely and fragrant thing when flowering in September, and a charming effect may be secured by allowing it a free run through woodland or by the water-side. The woodland, however, must not be too thick, else the lace-like sprays of bloom will not be freely produced.

P. campanulatum is not quite so rampant as the others in this group, but is the reverse of a safe neighbour for less robust border plants. Its panicles of rose and white, cup-shaped flowers are very beautiful and sweet, and it is just the thing to plant beside a woodland path. Strange to state, all these greater Knotweeds possess some property rendering them perfectly immune from rabbits. *Herbert Maxwell, Monreith.*

BEAUTIFUL CLIMBING PLANTS IN RIVIERA GARDENS.

(Concluded from page 432).

JASMINUM.

SEVERAL species of Jasmine are grown in Riviera gardens, but most of them are summer- and autumn-flowering kinds. The most useful of them all is *Jasminum primulinum*, and if properly treated in the matter of pruning and training, it gives a fine display of its large yellow blossoms during the early spring months. In certain instances whole or partial failure is attributable to injudicious pruning. Once established, this climber makes vigorous growths which should be trained in to ripen, removing all the feeble and superfluous ones; too often they are clipped back, hedge-fashion, which results in weak, unripened growth and, consequently, little or no bloom.

J. nudiflorum is not so generally grown as it deserves to be, the prejudice against it being due to its loss of foliage in winter, but if associated with small-growing Ivies or other creepers of slender growth the effect is good, as the evergreen foliage of the associated plant displays the long, graceful and abundantly-flowered growths to full advantage.

J. Beesianum is a very quick and vigorous grower, but its flowers, although freely produced, are not sufficiently conspicuous to produce a fine effect. When someone succeeds in obtaining a hybrid between *J. primulinum* and *J. Beesianum* we should obtain a fine plant, but, unluckily, the latter will have to be the seed parent, as I have never known the former to seed; moreover, pollen of *J. primulinum* is difficult to obtain as most of the flowers are semi-double.

J. revolutum, *J. Sambac*, *J. odoratissimum*, *J. arabicum*, and other species are to be met with, but they are seldom effective. *J. grandiflorum*

is very largely grown but chiefly for its perfume, many acres being under culture for that purpose.

LANTANA.

Many varieties of *Lantana aculeata* are grown in Riviera gardens and all produce a pleasing effect, whether trained to walls or employed as stop gaps amongst shrubs, etc. They are summer-flowering, but if pruned in mid-summer the flowering period is prolonged often into the new year, and on the eastern side, where frost does not interfere with their growth, they flower more or less the whole year through. If allowed to seed, they are still handsome with their bunches of metallic-blue berries, but this only when they are trained to a very sunny wall, or some very warm spot fully exposed to the south.

L. delicatissima is a charming species, but not so frequently met with as it should be, although its propagation is very simple. However, here, as in many other places, any sort of shoot is regarded as suitable for a cutting, whereas stock should be grown specially for propagating and basal cuttings only used. These invariably make the best plants, and this reference holds good with all climbers and most other plants. Less vigorous than most of the other species, *L. delicatissima* is very useful for covering low walls, or for carpeting small areas of rockery; in all cases it is very effective with its abundance of Verbena-like clusters of rosy-lilac flowers, and it is almost always in bloom. This species deserves to be more generally grown in England as a pot plant for conservatory decoration, either as bush specimens or low standards.

THUNBERGIA.

It is singular that although *Thunbergia grandiflora* is often met with, it is only on two occasions I have found *T. coccinea*. The former, when planted in a warm, sunny spot facing due south, soon becomes a fine picture, loaded with its large, blue flowers which are only equalled by the bright blue of the sky above.

It is a very quick climber, and soon covers a large area. If planted in shade it rarely flowers. I remember a specimen covering the whole of a large building, facing north, which has never flowered.

LOPEZIA MINIATA.

Known as the Mosquito Flower, this is one of the quickest and most effective of climbers for covering small areas. Flowering as it does all the winter and spring months, it is most useful, and being light in foliage it may be grown amongst other and heavier-growing climbers, producing a pleasing effect with its myriads of small red flowers.

It requires hard pruning, often twice in a season, to keep it within bounds.

STREPTOSOLEN JAMESONII.

Grown in bush form this is a very showy and popular plant when laden with its large clusters of beautiful orange-red flowers, but it is never so effective as when used in a fully-exposed sunny spot for covering low walls. When grown in this way some of the basal growths will produce heads of flower a foot across.

ARAUJA SERICIFERA.

Although not a showy climber, this old plant, generally known as *Physianthus albens*, produces small white flowers, followed by large pods of seeds, and is useful for planting in out-of-the-way places where it may ramble at will.

Known popularly as the Cruel Plant, it is useful when in flower, because it catches various species of injurious moths, the caterpillars of which play such havoc amongst our garden plants. I have noticed in early morning dozens of Potsherd (?) and Vapourer moths held prisoners by their proboscis: they are soon killed by large wasps which quickly discover them.

I have occasionally found one or two specimens of the smaller *Sphingidae* entrapped by the flowers, but the larger species, being heavy and more powerful, usually escape, although they may leave the whole or part of their proboscis in the grip of the flower.

PELARGONIUM.

Pelargoniums are largely used on the eastern Riviera for covering walls, and the Ivy-leaved Mme. Crousse gives a grand display of blossom practically the whole year round. It always looks best when the growths trail downwards, although it is often trained around trees, but in such positions care has to be exercised in giving the plants their annual cleaning, as the stems are so brittle that a careless person may easily break half the growths and so render the plants unsightly for a whole season.

There are many fine varieties of the Ivy-leaved section, but with the exception of *Souv. de Chas. Turner* and a few others, most of them lack the vigour and decorative value of Mme. Crousse.

Some of the old-fashioned Zonal varieties are used for covering walls, and they are a blaze of colour for several months, revelling in the drought and intense heat to which they are subjected during the summer. They are always most effective when growing in company with other creepers.

SENECIO.

Senecio hederaefolius is extensively planted for covering large spaces, and is at its best during the early-winter months, whilst *S. macroglossus*, which flowers in summer, is not so frequently met with.

KENNEDYA AND HARDENBERGIA.

The most useful and showy of all the species of *Hardenbergia* is *H. Comptoniana*. I doubt very much whether there is any real distinction between this and *H. monophylla*, the latter probably producing the larger flower.

Light in growth, *H. Comptoniana* may be associated with other creepers or allowed to ramble at will, when it soon takes possession of the situation if left unchecked. The finest specimen I have seen was one which had taken possession of an Olive tree, eventually killing its support and forming a most imposing specimen when in full bloom.

Kennedya nigricans with its almost black flowers is a very vigorous grower, but *K. Martynata* (or *prostrata*) with its deep red flowers, is the more effective of the two. It is often met with under the name of *K. rubicunda*. This is raised from seeds, and it is best to sow the seeds just before they are quite ripe, when they germinate in a short time, but if allowed to become perfectly ripe they often take months to germinate.

Many other creepers or climbers are used for the embellishment of our Riviera Gardens, and many more might be introduced, but, alas! many of southern nurserymen here use any kind of soil that is handy, and the young plants present such a sickly and stunted appearance that visitors are not eager to buy them. Injudicious watering after potting, especially amongst hard-wooded plants, is also a cause of many failures. *F. W. Smith.*

ORCHID NOTES AND GLEANINGS.

CYPRIPEDIUM BRIGADIER, BECKTON'S VAR.

THE illustration on p. 443 (Fig. 180), shows the fine form and markings of this handsome *Cypripedium*, although it fails to convey the fine colour of the flower. *C. Brigadier* is the result of crossing *C. Gaston Bultel* with *C. Lecanum*, Keeling's var., and the variety now referred to is a distinct improvement upon the original cross. The broad, dorsal sepal is three inches across, rich burnt sienna colour, with crimson speckles which are very bright and effective where the coloured area merges into the white margin. The petals are well displayed, and, like the lip, coloured similarly to the dorsal sepal. Mr. Bertram J. Beckton, Daisy Bank, Irlams-o'-th-Height, Manchester, exhibited this variety at the meeting of The Orchid Club, Manchester, on November 13, last, when it was awarded a Premier Diploma, as recorded on p. 419 of our issue of November 21. Our illustration represents the flower at about three-quarter size.

INDOOR PLANTS.

WINTER FLOWERING BEGONIAS.

WINTER-flowering Begonias, as represented by the Gloire de Lorraine group, and the larger-flowered type resulting from crossing Begonia socotrana with tuberous-rooted varieties, are of immense importance for the decoration and furnishing of the greenhouse or intermediate house during the winter months, and they are equally valuable for furnishing the conservatory and for house and table decoration.

The Begonias resulting from crossing B. socotrana and the tuberous-rooted varieties are very beautiful, but not so generally grown as they deserve to be, probably because their successful cultivation is by no means easy. That this difficulty is fairly general is proved by the many requests for advice on their cultivation.

The most difficult period is during the resting stage, for these hybrid Begonias have neither the scaly rhizome or resting buds of B. socotrana nor the tuberous roots of the other parents, although in some of the stronger-growing varieties a small, tuberous root-stock is formed. In certain of the smaller-growing and weaker varieties, there is little more than a slight swelling at the base of the shoots, and when this is the case, they are very difficult to maintain over the resting period, indeed, it is necessary to keep a large stock of plants for propagation, as losses are generally heavy in the resting stage. Such varieties as The Gem, Elatior, and Idealea are particularly difficult to manage in this respect.

The last set raised and put into commerce by Messrs. J. Veitch and Sons, just before they gave up their business, are much stronger-growing plants, and are easier to keep safely over their resting period; they include Exquisite, Optima, Emita and Fascination. The older variety, Mrs. Heal, also falls naturally into this set, as does Orange King sent out by Messrs. Clibran's.

During their resting period, which extends from the middle or end of December until April, the plants should be kept in a temperature of about 55°, the chief aim being to keep the stems and leaves fresh and green so long as possible, in fact, they should be retained more or less, until new growth appears at the base. If, through any circumstances, the stems are lost, there is very little chance of saving the plants, especially of such varieties as Idealea and Elatior. In any case it is fatal to dry them off as is done with ordinary tuberous-rooted Begonias.

During the resting period water should be supplied very carefully as over-watering is fatal, nor must they be allowed to become too dry, as either extreme is likely to result in the premature loss of the old stems. As a means to keeping them fresh, a moist atmosphere should be maintained by light spraying on and between the pots.

If all goes well new growth should appear towards the end of April, and more water may then be given. From the middle of May and throughout June, the young shoots of from three to four inches in length will provide suitable cuttings. About this time it is usually found necessary to remove a portion of the old leaves to allow the light to reach the young growth. The cuttings should be cut close to the root-stock, taking care not to damage the younger shoots that will provide successful cuttings.

Cuttings are best inserted singly in small pots in a light, sandy compost, plunging the pots in a propagating case, with bottom heat at command, in a temperature of 60° to 65°; here they will root quickly, and after rooting should be removed from the case and stood on a bench well up to the roof-glass. So soon as they are well-rooted transfer them to slightly larger pots; when they have recovered from the repotting, and as the season advances, gradually accustom them to a lower temperature and more airy conditions. During the summer these Begonias grow freely under much the same conditions as the ordinary tuberous-rooted varieties, only the temperature must be a little higher,

and the atmosphere rather closer and moister. Very little fire-heat is necessary at this period except during dull weather. An average temperature of 50° to 60° suits them quite well in summer, although it may be allowed to rise higher with sun heat, especially when the house is closed. Ventilation should be given with great care at all times and shade provided during the hottest part of the day. I am convinced that many failures result from growing these Begonias in a stuffy, very warm atmosphere.

Early-rooted plants of such strong-growing varieties as Exquisite, Fascination, Mrs. Heal, and Orange King may be potted into six-inch pots for flowering, while later-rooted stock of the same varieties make useful plants in 4½-sized pots. The smaller-growing varieties as represented by The Gem, Elatior, Idealea and Optima, give the best results when grown in forty-eight sized pots. Over-potting must be guarded against and careful watering is essential at all times.

The potting compost should consist of a good medium loam that has been stacked for twelve months, a little well-decayed leaf-soil (the amount will vary according to the character of the loam), and sufficient sand to render the whole porous. A forty-eight-sized potful of bone meal may be added to every bushel of compost, and a dusting of lime should also be added, as apart from its other uses, it appears to be a deterrent to eel-worm, although the only certain safeguard against this pest is to sterilise both the loam and leaf-soil.

In common with most Begonias, the winter-flowering varieties are subject to attacks of Begonia mite, generally known as "rust"; this can be cured, and more important still, can be prevented, by the use of the sulphur vaporiser, a few applications during the season being sufficient to check this pest. Attacks of aphid may be prevented by light and occasional fumigations.

In addition to the varieties already mentioned there are numbers of double and semi-double Begonias, mostly raised by Messrs. Clibran's. These include Altrincham Pink, Clibran's Pink, Eclipse, Emily Clibran, Empress, Flambeau, Scarlet Beauty and Vulcan. Unfortunately, in the immediate neighbourhood of London it is useless to attempt their cultivation, for one foggy night will strip them of every flower and bud.

The other winter-flowering Begonias, as represented by Begonia Gloire de Lorraine and its varieties, are very popular, and their cultivation is well understood. They are easily propagated by means of leaf-cuttings or from basal cuttings secured early in the year, the old plants having their flowering shoots partly cut back to induce young growths to start from the base. Some cultivators contend that leaf cuttings make the best plants; personally, I have not observed any difference, and cuttings certainly provide the quickest method of obtaining plants.

These Begonias are invaluable for decorative work, and they may be grown into large specimens, or in forty-eight or even sixty-sized pots for indoor and table decorations; they are also ideal for hanging baskets. Not the least of their valuable qualities is the length of time individual plants remain in flower. I have known baskets placed in the flowering house during October to be in good condition the following October, when the fresh stock displaced them. In addition to the type, there are many varieties, such as the white Turnford Hall, Mrs. Leopold de Rothschild, which to-day seems more largely grown than the type, Amabilis, Patrie, Rochfordii and The King. There are also some of American origin, such as Glory of Cincinnati, Mrs. Petersen and Peerless. Mrs. Petersen, with its deeply-coloured flowers and dark foliage, is valuable for decorating, but is rather slow-growing, and if large plants are required they should be grown on for a second year; it is also an advantage to root the cuttings during November.

It may be of some interest, especially to the younger generation of gardeners, to give a brief outline of the history of the winter-flowering

Begonias referred to above. Begonia socotrana which has played such an important part in the production of these plants, was introduced from the island of Socotra in 1880 by the late Professor Sir Isaac Bayley Balfour, Regius Keeper of the Royal Botanic Garden, Edinburgh. In 1892, M. Lemoine, of Nancy, crossed B. socotrana with B. Dregei, a white-flowered South African species, the resulting hybrid being the well-known B. Gloire de Lorraine. In 1903, Messrs. J. Veitch and Sons raised Agatha and Agatha compacta, the former resulting from a cross between B. socotrana and a hybrid known in gardens as Moonlight, this being the result of a cross between B. Pearcei and B. Dregei. Agatha may be best described as a dwarf-growing B. Gloire de Lorraine; Agatha compacta is still more compact and resulted from crossing B. socotrana with B. natalensis, a South African species, resembling B. Dregei.

Turning now to the other set we find that B. socotrana was again the potent parent. Messrs. J. Veitch and Sons had already done good work with tuberous-rooted Begonias, the original species of which was introduced by them from South America. The earlier of the large-bloomed winter-flowering varieties we are now considering were raised by that clever hybridist and plantsman, the late Mr. John Heal. The first one flowered during 1882, and resulted from crossing B. socotrana and B. insignis (incarnata), a Mexican species. The hybrid was named Autumn Rose, but it was not distributed; the next variety, John Heal, flowered during 1883 and in this case B. socotrana was the seed parent, the summer-flowering Viscountess Doneraile, one of the early varieties of the tuberous-rooted section, being the pollen parent. Adonis, distributed in 1887, was raised from an orange-flowered tuberous variety crossed with John Heal. Following Adonis came Winter Gem, from B. socotrana and a dark crimson, tuberous-rooted variety. A semi-double, rose-coloured tuberous variety crossed with B. socotrana, produced from a single seed capsule, the varieties Ensign, Winter Perfection, Idealea and Success. Another cross with a single, scarlet-flowered variety produced Mrs. Heal, Myra and Winter Cheer. These were followed by Julius, Sylvia, Elatior, etc., and then came the last set before the firm closed down, viz., Exquisite, blush-white passing to clear pink towards the margins of the petals; Emita, coppery-orange; Fascination, salmon-orange tinted rosy-red—this gives a fine warm mass of colour during the dull days; and Optima, in some respects the most dainty of them all, somewhat slender-growing with smaller flowers, produced in wonderful profusion, the soft, warm salmon colour of the flowers making it ideal for decorative work. Not the least of their merits is the length of time those plants remain in flower. Even under the adverse winter conditions that obtain at Kew, they remain in flower for at least two months. There are, of course, other winter-flowering Begonias but limitations of space forbid their mention here. J. Coult.

NOTICES OF BOOKS.

Bulb Gardening.

In the preface the author of this book* states that experts or bulb specialists are well-provided with "profound works," and so he writes for the "less experienced home garden enthusiast." In the 223 pages (including index) he conveys a large amount of useful information upon a very interesting subject. He indicates the right way of planting bulbs, and by means of diagrams, shows what is equally important, the wrong way of doing so. Possibly the "less experienced" enthusiast may not know which is the right way up of a bulb or tuber, and so Mr. Macself gives a page of diagrams "showing the right way for planting."

* *Bulb Gardening*. By A. J. Macself. Thornton Butterworth, Ltd., 15, Bedford Street, W.C.2. Price 6/- net.

We agree with the author that "growers of Cucumbers, Melons or Mushrooms are in the fortunate position of being able to utilise the compost from their beds to improve the soil of the bulb beds, the manure contained in the compost having lost the rankness which the bulbs cannot tolerate." But how many home garden enthusiasts of small experience grow Cucumbers, Melons and Mushrooms?

Information regarding the care of bulbs after the plants have flowered and before the foliage has died down is good, but we cannot agree with the unqualified recommendation that September and October are better months for planting in than November. Most Tulip enthusiasts, and certainly market growers, agree the first half of November is the best period in which to plant bulbs of those fine garden subjects—the May-flowering Tulips. Mr. Macself discusses Daffodils at some length and gives selections of varieties for various purposes; he deals similarly with Tulips. Regarding Gladioli, his advice to place a layer of sand beneath each corm at planting time is good in so far as heavy and sticky soils are concerned, but in light and moderately light soils this provision is entirely unnecessary, as we have proved after many years' experience. By the way, do the great Gladioli experts plant corms with such meticulous care even in heavy land? We grow not.

The author covers a wide field, for he uses the term bulb in its wide-embracing sense so as to include tubers as well as corms and bulbs, though why Dahlias receive no mention and Begonias are included, is as difficult to understand as is the inconsistency of including *Callium*, *Eucharis*, *Gloriosa* and *Hymenocallis* in a work for the "less experienced home garden enthusiast."

However, the work will prove useful to many who are novices in the ways of bulbs, corms and tubers. We are glad to observe that Mr. Macself has many good words to say on behalf of Freesias and Lachenalias and while we are pleased to see that he has indicated those Liliums which are stem-rooting, we do not see eye to eye with him as to the depth of planting Lily bulbs. The work is illustrated by several plates in colour, numerous half-tone reproductions and many line drawings, and it is well-printed.

NURSERY NOTES.

MESSRS DOBBIE AND CO., PORTOBELLO EDINBURGH.

SEPTEMBER, in the nurseries of this famous Scottish horticultural establishment, is a month of splendour and abundant interest, for in the cool, northern climate, many flowers, which in the south have lost their pristine beauty, are still in the fulness of their glory, whilst the Dahlias, Roses, early Chrysanthemums and other flowers of autumn are happy in the temperate glow of September sunshine.

Roses cover an extensive area and embrace all the best of modern and older varieties: the brilliant colours were at their very best on the occasion of our visit. Betty Uprichard The Queen Alexandra Rose, Lady Inchiquin and K. of K. glowed with a lustre which told of rude health, and the rich yellows of Mrs. Wemyss Quin, Golden Emblem, and Christine showed no signs of bleaching such as we frequently see in southern gardens. Numbers of new varieties are forthcoming from Portobello; Mrs. Fred H. Howard, named by Mr. F. H. Howard, the American rosarian, is a delightful flower of deep orange with a sheen of old gold; Monarch will be a useful addition to exhibition Roses, producing blooms of fine build and substance, the colour being a pleasing shade of pink; Daphne is specially noteworthy by reason of its rich perfume, and John Russell is of great size and glowing crimson. All the Roses at the Portobello nurseries are worked on *Rosa laxa*, and the big batches of robust bushes disarm criticism of this comparatively modern Rose-stock.

That the development of modern types of decorative Dahlias has brought the flower into unprecedented popularity is placed beyond the shadow of doubt by the mere sight of the immense quantity grown by Messrs. Dobbie and Co. Business is the purpose of the firm's existence, and demand is the governing factor in regulating stock. With the many thousands of plants grown for purposes of propagation, the output of young stock in spring must be enormous, and it is noteworthy that Collette varieties occupy a foremost place, the Coltness type being also prominent. A few of the old double show Dahlias are grown for those amateur florists who still exhibit at local Scotch shows, and the dainty little Pompons have evidently many admirers, for the collection of these occupies a large area of ground. Cactus Dahlias are undoubtedly the supreme favourites of the Dahlia fancier, but the quality of a variety must be of the very best, and one such, seen in fine form at Messrs. Dobbie's, is Archibald, V.C. Its colour emulates the delicate and subtle tints of a clear piece of mother-of-pearl, and if there is a finer Cactus Dahlia for form, colour and all round quality we have missed seeing it. Of the Collettes a few outstanding varieties are Lochnagar, Linnet, Islay, Hussar, Scarlet Queen and Thames, but many others are fine enough for any collection. Coltness Gem has a rival for brilliancy in Peter Pan, which is of a scarlet akin to that of a guardsman's tunic. Midget and Dixie are both clear yellows, but Pink Coltness is not of very pleasing tone.

Exhibition and bedding varieties of Violas and Pansies were flowering as profusely and perfectly as we in the south are accustomed to have them in a favourable spring season. Whatever may be said to the contrary, a Scotch exhibition Viola is a flower of wonderful form and beauty, and so long as it is accepted and grown as an exhibition flower, and is not asked to take the place of a real bedding variety, it is a flower to admire and cherish. On the other hand, true bedders are handled in vast quantities by Messrs. Dobbie and Co. and in their way, are as fine as the aristocrats of the show board.

Passing through the hardy perennial quarters a patch of *Cheiranthus edimensis* attracted attention, for here in mid-September it was thickly bespangled with fascinating little blossoms, and it had been thus bedecked right through the season from Wallflower time in spring. The colours vary from amber-yellow to wine-red with sometimes a lavender-purple flower which bespeaks the influence of *Cheiranthus limifolius* as one of its parents. *C. Allionii* is credited with being the other parent: it may be so, but somewhat similar crosses have been made between *C. mutabilis* and *C. limifolius*. At all events, it is a very charming subject, and suitable for planting in broad masses.

The glasshouses contained much of interest although many of the subjects grown for seed had passed their effective stage. Begonia *narcissiflora* is one of the latest developments of the tuberosus-rooted Begonia, the outer petals of which are like a frilled single flower, but protruding from the centre to a length of three inches, or thereabouts, is a tubular, trumpet-like limb of the bloom, closely similar in form to the trumpet of a large-flowered Daffodil. The effect is distinct, peculiar perhaps, but pleasing, and as the colours include salmon and rosy pink, cream, lemon, and deeper yellow, together with red shades, this new break is likely to have many admirers. A grand batch of Gloxinias still carried many gorgeously coloured blossoms, despite the weight of almost ripe seed upon the plants. An outstanding feature of the strain is its perfectly erect-flowering habit, the blossoms standing well up above the ample foliage and producing an infinitely finer effect than older types which carry their flowers horizontally.

Southerners are disposed to think that florists' flowers have slipped out of cultivation, but while visiting Messrs. Dobbie's establishment there are pleasant reminders that in Scotland, or somewhere, this firm must still find a big outlet for most, if not all, of the real old florists' flowers, tender and hardy, annual

and perennial, while the perfection of form, accuracy of markings and other "points" of today's varieties, even of such old time favourites as French Marigolds, would warm the hearts of the greatest stickler for "points" in a flower.

HARDY FRUIT GARDEN.

PIPLESS FRUITS.

A YEAR or two back, I noted in these pages a curious prevalence, or at any rate, commonness, of pipless Pears from the perry orchards. Many a fruit, though of good or even excessive size, was found to be without any well-formed or sometimes even any recognisable pip. This season I have noted a similar condition amongst Apples. On slicing a dozen or two from a pair of trees which carried a distinct crop (say one-third or one-quarter crop), not a single one was found with a developed pip, a series of tiny black specks representing what should have been pips, though many of the fruits were of good size (90 grams, or well over three ounces). Curiously enough, the fruit of another variety (a pair of trees in the same row in the orchard), showed every cell filled with good plump pips. It appears that the pipless specimens are not infrequently above usual size and irregular in shape.

Quite an unexpected amount of "glassiness" has also been met with in cider fruit from different orchards, and in many cases, apart from apparent "glassiness," juices have been very viscous or mucilaginous, and very rebellious to filtration.

ANNUAL FRUITING

MR. WESTON (p. 392) raises several interesting questions. The vine produces fruit on a shoot derived from a bud formed the previous season; a shoot from a bud on older wood will only blossom on the laterals that its shoot produces, and if the vine be out-of-doors or in a cold house, the fruit will probably be too late to ripen. There must be some occult sap change in this transfer which leads to the formation of a fertile bud. In the Peach, Cherry and Plum fruit-bearing occurs directly on the wood formed the previous season. In all the above there is ready-made fruiting stuff at the commencement of each season. On the other hand, the Apple is credited with needing two years and the Pear with three (though occasionally less) years for the formation of a mature fruit-bud: indeed, apparently well-developed fruit-buds may go on year after year without even blossoming—evidently "some" factor in the necessary nourishment, or perhaps conditions which will lead to the establishment of the necessary nourishment is lacking. For instance, I have such a Pear, that only bore a crop after the very hot, dry season of 1921, though it is well-furnished with apparently healthy fruit buds. It is clear that there must be more chance for a hitch between blossom-bud production and actual fruiting in the case of the Apple and Pear, than in the Plum tribe: thus, heavy-cropping or even blossoming may rob the fruit buds of some amount of necessary food, and so make them fail to bear fruit. Due time is evidently needed for the working up and correct passage of nutritive materials to the developing bud, but that is not all, for due temperature at the time of blossoming must also prevail, or all may be latent. A Plum tree, upon whose blooms abundant bees have been observed working, and upon which fruit only occurred on twigs close to the wall, whilst those only a couple of inches away, like those still less protected, were bare, is a striking feature, and suggests want of warmth where there was no fruit.

With regard to north and east walls, an old and valued friend put his Apricot trees on the east of the walls of the old rectory garden, and when he retired after forty-nine years, he planted them similarly at the new house. I recall his trees as perfect pictures when the fruit was ripening, though whether they fruited well every year I cannot state. H. E. Durham.

HOME CORRESPONDENCE.

Colletia cruciata.—I see that a correspondent from Cardiff has mentioned that he observed a specimen of *Colletia cruciata* in bloom at Roath Park. Here, somewhat further west, a fine specimen of *Colletia cruciata*, about twelve feet high, has been blooming freely for the last two months, and even now, the last day in November, is well in bloom. Alongside it is its relative, *C. spinosa*, about fifteen feet high, which also flowered in October. The latter, although ornamental, has not the fragrance of the former. A. H. Vivian, *Clyne Castle, Blackpill, Swansea.*

Onions and Parsley.—I was interested in Mr. Gardner's remarks on this subject, on p. 435, because it illustrates the practice of Mr. Esson, late gardener at Crimonmogate, Aberdeenshire, where I was an apprentice. The plot of ground to be planted was marked out into four-foot beds, with foot-wide alleys between. The Onion seed was mixed thinly with that of Parsley, and sown broadcast. The early thinning of the plants received careful attention. Each apprentice gardener was allowed to sow one bed. A similar practice with respect to sowing broadcast was followed in the case of Carrots. I spent four-and-a-half years in the gardens at Crimonmogate, and have never had cause to regret my stay there. In my opinion, all young gardeners would derive great educational advantages from sound practice in general out-door work. Thos. Coomber, *Monmouth.*

Carnation Diseases.—We hear far too much about disease in Perpetual-flowering Carnations, particularly stem-rot, and those who talk most loudly appear to be the large commercial Carnation growers, who supply the markets with flowers and have grown Carnations for many years. Undoubtedly, the chief cause of all the trouble is that they do not change their stocks, or their soil, often enough, whereas, if they only followed the example of the most simple of farmers, they would know that change of stock and rotational cropping are necessary. In different districts certain methods of cultivation become popular, such as those of adding potash and phosphates to the soil, but Carnations cannot be grown successfully in this fashion for many consecutive years. The soil in the greenhouse has not the benefit of the action of frost, wind and rain, etc., and therefore the conditions are unnatural. To my mind, the interchange of stock in certain districts is a mistake. A farmer gets his seed Potatoes from a different district and soil to his own, and it is only by following this method that the constitution of a variety of Carnation can be retained. We have two nurseries for perpetual-flowering Carnations, in different districts, one on light soil, the other on heavy clay, and the benefit the stocks receive by being changed over every third or fourth year is nothing short of marvellous. An exchange of stock is tempting, but, as a rule, both parties to the exchange give cuttings from their worst, not their best, plants, whereas, it is only the best selected cuttings, free from disease, that are worth the time, expense and energy necessary to cultivation. C. Montagu Allwood.

Late Wasps' Nests.—The note by Mr. A. T. Harrison, on p. 432, is interesting, and I shall be glad if he will send me some specimens of the wasps in question with a view to identifying the species. Failing this, was the general colour of the outer envelopes of the nests grey or brown, and was it shell-like in pattern or otherwise? Perhaps he has kept some and can send me a sample. It is not often that wasps remain active so late in the year, and it is much more important to destroy nests in September, before the queens and drones usually come forth, i.e., in early October. Mr. Harrison can rest pretty well assured that by no means all the thirty or forty queens he found would have survived to start nests next spring, and if they did by any chance it by no means follows that all the nests would have persisted through the summer. C. Nicholson, 35, The Avenue, Hale End, E.4.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 1.—Although there were numerous bright and attractive exhibits at the Royal Horticultural Hall on this date it was obvious that the severely cold weather had kept many exhibitors away. There were, however, few vacant spaces, as the British Carnation Society contributed several exhibits, and other tables were filled with paintings and drawings of plants and flowers. Orchids were a strong feature, but with the exception of Mr. Pitt's display, amateurs failed to contribute to what was supposed to be a *Cypripedium* day. There were many complaints concerning the temperature of the hall, which, we understand, fell to 40° early on December 1. At 11 o'clock the thermometer registered 46°, and the mercury soon rose with the increase of members of committee and some early visitors. Unless there is a guarantee that a more comfortable temperature will be provided we are afraid many growers will decline to exhibit during the winter season.

Orchid Committee.

Present: Sir Jeremiah Colman (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Fred J. Hanbury, Mr. C. J. Lucas, Mr. H. T. Pitt, Mr. S. W. Flory, Mr. Arthur Dye, Mr. John Cypher, Mr. Charles H. Curtis, Mr. Fred. K. Sander, Mr. J. E. Shill, Mr. T. Armstrong, Mr. E. R. Ashton, Mr. J. Wilson Potter, Mr. Stuart H. Low, and Mr. H. G. Alexander.

AWARDS OF MERIT.

Cypripedium Locarno (Albert Fisher × *Christopher* var. *Grand Duke Nicholas*).—A big, bold hybrid with a very broad, dorsal sepal and almost equally large ventral sepal. The dorsal sepal is hooded, white with green shading, and large, purplish spots; the petals are green with brownish lines, and the lip is green shaded with brown. Shown by Messrs. BLACK AND FLORY.

Odontoglossum Robin Hood (Mars × *Illustrissimum*).—This is a handsome *Odontoglossum* of fine size and form. The colour is rich brownish crimson with a very narrow white edge to all the segments, the white margin being slightly heavier on the lip. Shown by R. GERRISH, Esq. (gr. Mr. W. Sorrell), Salisbury.

Vuytskeara Lutetia (Vuytskeara *Brewii* × *Odontoglossum luridum*).—The small plant shown carried two handsome flowers. The sepals and petals are rich Venetian-red, and the lip has similar colouring at the base, while the broad front portion is purplish rose, with white-rimmed red spots over the central area. Shown by Messrs. CHARLESWORTH AND CO.

GROUPS.

A delightful group of Orchids from H. T. PITT, Esq. (gr. Mr. Thurgood), Rosslyn, Stamford Hill, was greatly admired. It was composed largely of *Cypripediums*, these being represented by *C. insigne* *Sanderæ*, *C. Glorita*, *C. Phantasy*, *C. The Claimant*, *C. Nellie Pitt*, *C. Etta* var. *Dainty*, etc., with several *Odontodas* and *Odontoglossums*, *Oncidium cheiroporum*, *Epidendrum Laucheanum* and the showy *Lycaste Tunstallii*.

A lovely group of *Calanthe Veitchii*, consisting of about 150 spikes of this useful winter-flowering Orchid, was shown by HENRY B. BRANDT, Esq. (gr. Mr. H. Cook), Capenor, Nutfield, Surrey. The foreground of the group was composed of *Cypripedium insigne* and its variety *Sanderæ*, while Ferns of various sorts, chiefly *Aspleniums*, provided a suitable ground work. One plant of *C. insigne* carried two dozen flowers.

BARON BRUNO SCHRÖDER (gr. Mr. Shill), Dell Park, Egham, showed half-a-dozen glorious spikes of the lovely *Calanthe Harrissii*; a superb spike of *Miltonia Lycæna* (Princess Margaret × Lord Lambourne) with crimson rose and white colouring; and a fine flower of *C. Cappa Magna*, with a large flat dorsal sepal heavily coloured with deep rose, brown, green and white.

A large exhibit from Messrs. COWAN AND CO., claimed considerable attention from Orchid

lovers. The plants were admirably staged and a few of the outstanding kinds were *Brasso-Cattleya British Queen*, *Laelio-Cattleya Urbania*, with a very bright purple lip; *L.-C. Queen Mary*, *L.-C. Natalie*, the chaste *Cypripedium Boltonii*, *C. Mary Gratrix*, *C. Maudiae magnificum*, *C. Goliath*, *C. Britain's Queen*, of fine form and substance; *C. Rossetti*, *Odontioda Alcazar*, and the white *Cattleya Salara*. *Masdevallia tovarensis* was also included in good condition.

Messrs. SANDER had several tall spikes of *Oncidium tigrinum* in their group, and many good *Odontoglossums*. Associated with these were *Cattleya Albion*, *Laelio-Cattleya Enid* var. *Sanderæ*, *L.-C. Schroderæ*, and the handsome golden *L.-C. Oriflamme*, the big *Brasso-Cattleya Boadicea*, *Cypripedium Nydia*, *C. Maudiae*, *Oncidium Forbesii*, and other good Orchids.

Messrs. J. CYPHER AND SONS contributed a fine collection of *Cypripediums*, and among their many good things we noted *C. Bourtonense*, *C. Leeannum Gratrixæ*, *C. Queen of Belgium*, *C. insigne Sanderæ*, *C. Gaston Bultel*, *C. Lecanum Clinkaberryannum*, *C. Ballet Girl*, and *C. Hassallii*, with *C. insigne Harefield Hall*, and its rival in size, *C. Goliath*.

In the annexe, Mr. HARRY DIXON had a small group wherein the brilliant, though small, *Sophro-Cattleya Dorea* (*Doris* × *aurea*), was an attraction. *Cypripedium Venus*, *C. Boltoni*, *C. insigne Sanderæ*, *Masdevallia tovarensis*, and *Cirrhopetalum Mastersianum*, were also included. Messrs. BLACK AND FLORY showed fine examples of *Cypripedium Locarno*, a very large hybrid, *Sophro-cattleya The Pearl*, and *Cattleya Lysander*.

Floral Committee.

Section A.—*Present:* Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mr. H. J. Jones, Mr. Donald Allan, Mr. J. M. Bridgeford, Mr. Montagu C. Allwood, Mr. D. Ingamelle, Mr. Andrew Ireland, Mr. J. B. Riding, Mr. F. G. Cousins, Mr. F. Streeter, Mr. W. B. Gingell, Mr. W. B. Crane, Mr. Charles E. Pearson, Mr. H. R. Darlington, Mr. W. H. Page, and Mr. E. R. Janes.

Section B.—*Present:* Mr. C. J. Musgrave (in the chair), Mr. W. J. Bean, Mr. Gerald Loder, Mr. G. Reuthe, Mr. W. B. Cranfield, Mr. Reginald Cory, Mr. C. Williams, Mr. T. Hay, Mr. A. Bedford, Mr. F. G. Preston, Mr. E. H. Wilding, Mr. W. G. Baker, Mr. R. C. Notcutt, and Mr. A. E. Bowles.

AWARDS OF MERIT.

Asparagus plumosus Boundii.—The plant shown under the above name is a distinct and valuable form of *Asparagus plumosus nanus*. The branches are more Fern-like, and the side shoots are much shorter than those of the variety *nanus*. It is an elegant and graceful pot plant, and the cut sprays would be valuable for all decorative purposes. The two plants on view were of an exceedingly prolific habit. Shown by Messrs. BOUND AND SON.

Chrysanthemum Belle Chinoise.—A large Japanese variety which we expect would be of the first exhibition size earlier in the season. It is of perfect exhibition form, and the narrow, bright yellow florets droop, making a graceful bloom. Shown by Messrs. KEITH LUXFORD AND CO.

Chrysanthemum Delicata.—A market Japanese variety, of rather more than average size, good form and delicate pink colouring, which is rather paler in the centre of the bloom. Shown by Mr. H. SHOESMITH.

Chrysanthemum Pink Prize.—A small market Japanese variety of bright mauve-pink colouring which would be valuable for decorative purposes. Shown by Mr. H. W. THORPE.

Chrysanthemum Ruby Ray.—A small single variety of intense velvety crimson colouring. The ray florets are broad, and the disc is perhaps a trifle large in comparison, but the vivid colouring is particularly valuable. Shown by Mr. H. W. THORPE.

Pavetta abyssinica.—This tropical shrub, which in the Mexican House at Kew has grown to fully fifteen feet high, might well be popu-

larly described as being a robust *Viburnum* of *V. Carlesii* type, bearing compact corymbs of short-stemmed *Ixora*-like flowers. The starry flowers are waxy white and have long filaments, but do not appear to possess the fragrance which is generally associated with tropical white flowers. Shown by the Director, Royal Gardens, Kew.

GROUPS.

No doubt the show of the British Carnation Society, which was held in conjunction with the R.H.S. meeting, was responsible for the magnificent collection of greenhouse Carnations arranged so tastefully by Mr. C. ENGELMANN. This filled a considerable table space, and the large vases containing high quality blooms in clear and distinct colours made a most welcome display. Chief amongst the varieties so well set up by Mr. ENGELMANN were Saffron, of rich yellow colour; Rouge, whose colour is amply descriptive; Laddie, of bright scarlet; Cupid and Delice, of lovely pink shades; and White Enchantress.

Another praiseworthy collection was well arranged by Messrs. STUART LOW AND CO. They had a very large basket of their variety Lady Hindlip, which received the B.C.S. Award of Merit. Mauve Queen, of delicately beautiful colouring; Saffron; Mrs. Hamilton Fellowes, deep purple; Mrs. Ives Improved, of deeper tone; Eileen Low, rich-salmon pink; and Sir Philip Sassoon, bright crimson, were also admirable. A small collection of Carnations set up by Messrs. ALLWOOD BROS. included a handsome vase of mixed varieties and several vases of *Dianthus Allwoodii*.

Just inside the entrance, BARON BRUNO SCHRODER (gr. Mr. E. J. Henderson), The Dell Park, Englefield Green, set up a magnificent group of Begonias of the Gloire de Lorraine type. These large plants, bearing immense quantities of flowers, were splendid examples of superb cultural skill. In addition to the variety already mentioned, there were equally good plants of Mrs. L. de Rothschild, which may be described as a glorified form; Mrs. J. Peterson, which in addition to an abundance of rich pink flowers has bronzy leaves; and a good white variety.

In a large floor group, Messrs. L. R. RUSSELL, LTD., displayed well-grown Palms, Cordyline indivisa, *Phormium tenax*, *Araucaria excelsa*, *Dicksonia antarctica*, and similar cool greenhouse plants of value for conservatory and house decoration. Mr. J. KLINKERT had a collection of well-grown topiary specimens.

Chrysanthemums were shown in considerable quantity and excellence by Messrs. KEITH LUXFORD AND CO. They had many large stands filled with exhibition blooms of great size, and of such varieties as Majestic, Julian and Thos. W. Pockett. In the centre of the large group there was a considerable quantity of bright blooms of Mrs. A. Brooker, of rather more than medium size, while the smaller varieties included R. Hooper Pearson, Nora, Everbright, and the Anemone-flowered Caleb Cox.

On the staging, Mr. A. G. VINTEN had many vases of decorative Chrysanthemums. The principal varieties were Aldyth, Bronze Molly, Balcombe Beauty, Ada Brooker, Golden Marvel and Challenger.

Messrs. SUTTON AND SONS had an interesting exhibit of Chrysanthemums raised from seed sown in February of this year. These were near all singles of decorative size, of good form and included a number of charming shades of colour. Such flowers as those shown are of great value for home decoration.

Fascinating little gardens of the miniature Japanese garden type were shown by Miss GLADYS HOUSE, who also had many bowls of water containing small floating gardens, which were made of a sort of pumice stone, which floats, with quaintly shaped plants in the depressions.

Mr. GEORGE G. WHITELEGG had a collection of well-grown Conifers, suitable for planting in the rock garden, and also exhibited in pots various Saxifrages with rosettes of sparkling silveriness. In spite of the lateness of the season, Messrs. REAMSBOTTOM AND CO. showed useful blooms of their strain of St. Brigid Anemones.

Lawn mowers, syringes and various garden

tools of good make were shown by Messrs. THOMAS GUNN, LTD. The Little Wonder Hedge Clipper was exhibited by Mr. J. HANSEN, and there were many exhibits of pictures of flowers and gardens.

Fruit and Vegetable Committee.

Present:—Mr. C. G. A. Nix (in the chair), Mr. H. S. Rivers, Mr. P. C. M. Veitch, Mr. Geo. F. Tinley, Mr. W. Lobjoit, Mr. H. V. Taylor, Mr. E. Laxton, Mr. S. B. Dicks, Mr. A. Bullock, Mr. A. Metcalfe, Mr. F. Jordan, Mr. E. Neal, Mr. H. Markham, Mr. J. Wilson, Mr. E. Beckett, Mr. W. H. Divers, Mr. T. Pateman, Mr. E. A. Bunyard and Mr. A. N. Rawes.

Mr. V. G. STAPLETON, Stamford, sent fruits of Persimmon, which we understand were ripened in the open. They were excellent specimens and perfectly ripe.

Messrs. LAXTON BROS. showed two new Apples one raised from King of the Pippins crossed with Cox's Orange Pippin, and the other raised from Allington Pippin crossed with Cox's Orange Pippin. The last was very promising and had much of the appearance and flavour of Cox's Orange Pippin. This firm also showed their new Apples, Lord Lambourne and Superb, the latter being one of the finest new Apples raised in recent years.

Messrs. G. BUNYARD AND CO., showed varieties of Apples illustrating some of the best in season. The sorts were Royal Jubilee, Baumann's Red Winter Reinette, Striped Beefing, Edward VII, Waltham Abbey Seedling, Bramley's Seedling, Lord Derby, Mere de Menage, Byford Wonder, The Queen, Norfolk Beauty and Ontario.

Wisley Rose Awards 1925.

THE following varieties of Roses under trial at Wisley, have received the Wisley Rose Award for garden decoration.

AWARD CLASS 1.

(Double and semi-double varieties). *Lady Pirrie*, raised and sent by Messrs. HUGH DICKSON, Belfast; *Madame Butterfly*, raised by Mr. E. HILL, sent by Mr. STEVENSON; *Mrs. Henry Boules*, raised and sent by Messrs. CHAPLIN BROS., Waltham Cross; *Independence Day*, sent by Messrs. BEES, LTD., Liverpool; *Joanna Bridge*, raised and sent by Mr. ELISHA HICKS, Hurst, Twyford, Berkshire; *Mrs. Herbert Stevens*, raised by Messrs. S. MCGREDY AND SON, sent by Messrs. A. DICKSON AND SONS.

AWARD CLASS 2.

(Double and semi-double varieties).—*Ariel* raised and sent by Messrs. BEES, LTD.; *Francis Gaunt*, raised and sent by Messrs. A. DICKSON AND SONS; *Zephyrine Drouhin*, raised by M. BIGOT, sent by Messrs. A. DICKSON AND SONS; *Salmon Spray*, raised by Mr. GRANT, sent by Messrs. HAZLEWOOD, New South Wales; *Souvenir de Claud Denoyel*, raised by M. PERNET-DUCHER, sent by Mr. E. J. HICKS.

AWARD CLASS 1.

(Dwarf Polyantha Varieties).—*Joan of Arc*, raised by M. LEVAVASSEUR, sent by Messrs. W. CUTBUSH AND SON, Barnet; *Crimson Orleans*, raised and sent by Messrs. LAXTON BROS., Bedford.

AWARD CLASS 2.

(Dwarf Polyantha varieties).—*Mrs. R. M. Finch*, raised by Mr. R. M. FINCH, sent by Messrs. HAZLEWOOD; *Maude E. Gladstone*, raised and sent by Messrs. BEES, LTD.; *Eblouissant*, raised and sent by Messrs. TURBAT, Orleans; *Orleans Rose*, raised by M. LEVAVASSEUR, sent by Messrs. W. CUTBUSH AND SON; *Coral Cluster* raised and sent by Mr. R. MURRELL, Shepperton.

AWARD CLASS 1.

(Single varieties).—*Pink Delight*, raised and sent by Messrs. LAXTON BROS.

AWARD CLASS 2.

(Single varieties).—*Ethel James*, raised and sent by Messrs. S. MCGREDY AND SON; *Irish Elegance*, raised and sent by Messrs. A. DICKSON AND SONS.

AWARD CLASS 1.

(Climbing varieties).—*Albertine*, raised and sent by Messrs. BARBIER, Orleans.

AWARD CLASS 2.

(Climbing varieties).—*Cardinal Wolsey*, raised and sent by Mr. LEESON, Grettton Northants; *Aimee Vibert*, raised by M. VIBERT, and sent by Messrs. F. CANT AND CO.; *Excelsa*, raised by Mr. WALSH, sent by Messrs. A. DICKSON AND SONS.

NATIONAL CHRYSANTHEMUM.

SEVERAL high-class novelties in Chrysanthemums were placed before the Floral Committees of the above society on the occasion of its meeting at the Royal Horticultural Hall, on Monday, November 30. The following awards were made.—

FIRST-CLASS CERTIFICATES.

Delicata.—II.1.b. A useful, reflexing Japanese variety of fine decorative form. The colour is soft pink. Shown by Mr. H. SHOESMITH, Junr., Mayford, Woking.

Jewel.—II.1.b. This variety is of large decorative size and it belongs to the reflexing Japanese section. The florets are narrow and pointed. The colour is light chestnut, with a glow which is produced by the golden reverse. Shown by Mr. H. SHOESMITH, Junr.

Pink Prize.—II.1.b. A beautiful deep pink decorative variety with broad and substantial florets. The colour shade is a particularly pleasing one. Shown by Mr. H. W. THORPE, Worthing.

Ruby Ray.—V.2.a. A handsome single variety of fine form and substance. The colour is a brilliant shade of crimson. Shown by Mr. THORPE.

Belle Chinoise.—II.1.a. A bright yellow. Japanese variety of graceful, drooping form. Shown by Messrs. KEITH LUXFORD AND CO.

Alert.—V.2.a. This is a showy single variety, with two or three rows of broad, reddish-crimson florets. A narrow zone of yellow around the eye adds to the attractiveness of this Chrysanthemum. Shown by Messrs. KEITH LUXFORD AND CO.

John Lingwood.—V.2.a. A large, single variety of fine form, with broad, round-ended florets. The colour is a clear golden yellow. Shown by Mr. E. J. HENDERSON, Dell Park Gardens, Egham.

READING AND DISTRICT GARDENERS'.

THERE was a large attendance of members at the usual fortnightly meeting held in the Recreation Club Room, Abbey Hall, on Monday, November 23, presided over by the president, Mr. Frank E. Moring.

The programme for the evening consisted of two papers held over from the meeting on November 9, namely "Schizanthus" and "Herbs." The former subject was introduced by Mr. A. W. Gower, The Gardens, Calcot Grange, who said that Schizanthuses were among the most beautiful of the half-hardy annuals and very hard to beat for conservatory or greenhouse decoration, besides being useful as cut flowers for table and house decoration. Full cultural details were given of the Wisetonensis and Sutton's Giant Hybrid forms. The subject of "Herbs" was introduced by Mr. E. J. Dore, hon. assistant secretary, who mentioned that although Herbs were grown in nearly every garden they did not receive the attention they deserved. About twenty kinds and varieties were dealt with, and full cultural instructions given for each. Interesting discussions followed each subject.

In a competition for eighteen buttons of Brussels Sprouts there were eight entries; the first prize was awarded to fine specimens staged by Mr. A. H. Dow, Calcot Park Gardens, who was followed closely by Mr. C. W. WRIGHT, The Gardens, Beenham Lodge (second prize), and Mr. H. WYNN, The Gardens, Luern's House, Goring Heath (third prize). In the non-

competitive section a First-Class Certificate was gained by Mr. A. H. Dow for a splendid collection of cut blooms of Chrysanthemums, especially fine being a bloom of Louisa Pockett, measuring over seventeen inches across. A similar award went to Mr. G. TOVEY, The Gardens, Leighton Park, for four vases of single Chrysanthemums. An Award of Merit was granted to Mr. E. ILES, 53, Brighton Road, Reading, for four vases of a white Chrysanthemum grown on an allotment. Special attention was directed by the judges to an excellent stem of Sutton's Exhibition Brussels Sprouts, shown by Mr. J. WYNN, The Gardens, Hammonds, Checkendon, illustrating the advantage of planting this popular vegetable in firm ground.

LAW NOTE.

PURITY OF SCOTCH SEED POTATOS.

At Ayr Sheriff Court Mr. James McMorland, farmer, Maxwellton, Dailly, was charged with a contravention of the Seeds Act, 1920, by selling to an English firm of Potato merchants five tons of seed Potatoes guaranteed to be of the Puritan variety, but which did not conform to the standard of purity required by the Board of Agriculture. A plea of guilty was tendered. It was stated that the Potatoes were sold in November, 1924. In July of that year they had been inspected on the farm by an official of the Board of Agriculture, and were reported to be over the standard. In England, however, the crops grown on pure land were found to be only twenty-seven to thirty-five per cent. of the Puritan variety. In extenuation of the offence an agent explained that Mr. McMorland had sold his crop on the strength of the Board of Agriculture's certificate. Under the circumstances, the Sheriff imposed a nominal fine of 5/-. It may be recalled that a similar defence was made at a recent prosecution at Stirling, and it will be interesting to hear what the Board of Agriculture has to say regarding their official inspections in question assuming of course, that the facts are as stated in the respective courts.

Obituary.

William Rickatson Dykes, M.A.—The chief subject of conversation at the meeting of the Royal Horticultural Society on Tuesday last, was the terrible motor accident to Mr. W. R. Dykes, the Secretary of the Society. Resolutions of sympathy and regret from the various standing committees were conveyed to the Council of the Royal Horticultural Society, and the sincere hope was expressed that Mr. Dykes would have a speedy recovery, and that the injuries he had received might not be so severe as at first anticipated. Alas! these hopes proved vain. The accident occurred at Mayford, Woking, late on Friday, November 27. Mrs. Dykes, who was with her husband, escaped with a few bruises, but Mr. Dykes lost his right ear and had his right arm and hand so severely damaged that the necessity for amputation was feared. A little later there appeared to be some hope that amputation would not be necessary, but on Tuesday last it became known that an operation would have to be performed. During the afternoon of that day the operation took place at Woking hospital, but the shock and injuries received had left the patient little recuperative power, and, despite all efforts to save his life, he passed away at 7.30 p.m. The death of Mr. W. R. Dykes under such tragic circumstances, has come as a great shock to the horticultural world, and those who have been accustomed to meet him at the fortnightly exhibitions can scarcely grasp the fact that his stalwart figure will be seen no more. In the prime of life and overflowing with energy, his early and sudden demise will be felt deeply by the Council of the Royal Horticultural Society, whom he had served as Secretary

since the early part of 1920. Apart from his official position, Mr. Dykes was known to horticulturists as the author of a monumental work on *The Genus Iris*, published by the Cambridge University Press in 1913, and also for his wide and intimate knowledge of species and garden varieties of Irises, Tulip species, and autumn-flowering Crocuses. On all those subjects he has contributed articles to these pages. He was also a raiser of Irises and Tulips, and cultivated these plants while he was a master at Charterhouse School, pursuing their cultivation with even greater assiduity and pleasure during the past five years. It is one of the ironies of fate that Mr. Dykes was one of the four horticulturists chosen to fill vacancies which have arisen in the list of those holding the Victoria Medal of Honour in Horticulture. Our readers will join us in deep sympathy with Mrs. Dykes in her sudden bereavement, and also in sympathy with the members of the Council of the Royal Horticultural Society who have been deprived in such tragic fashion of their able Secretary.



THE LATE MR. W. R. DYKES.

Fred. Greet.—Mr. F. Greet, for thirty-three years gardener to P. D. Williams, Esq., of Lanarth, St. Keverne, died quite unexpectedly in his sleep on Tuesday, November 24. He was engaged in his usual work on Monday and went to bed apparently quite well, but passed peacefully away before the morning. He was born in December, 1872, at Tregony, in Cornwall, and was for a few years with Mr. Naylor Carne, who was a very keen Cornish gardener in the eighties and nineties. He came to Mr. Williams when the latter started his garden at Lanarth in 1892, and the raising and planting of this large collection of shrubs and Narcissi have been exclusively under his supervision. He had a quite unusual charm of manner and was devoted to the plants he had managed so successfully and so long. He was a remarkably skilful cultivator and propagator, with a marvellous memory for plants. He invariably turned out his Daffodils at exhibitions in the acme of quality and condition. The flowers which he exhibited at the R.H.S. shows have always been universally admitted as the best of their kind. He leaves a widow, and a son who will succeed him as gardener at Lanarth. They both have our sincerest and deepest sympathy in the great and irremediable loss that has fallen on them.

Mrs. James MacDonald.—We deeply regret to learn that Mrs. Edith Elizabeth MacDonald, wife of Mr. James MacDonald, of Harpenden,

died suddenly in the early morning of November 27. To Mr. MacDonald and his two sons we tender our deepest sympathy.

Alexander Shivas.—We regret to have to record the death, on November 27, of Mr. Alexander Shivas, the head of the firm of Messrs. Shivas Brothers, florists, Stonehaven. Mr. Shivas, who was in his sixty-first year, occupied a prominent position in Stonehaven, where he had been in business for about thirty years. He was held in high esteem as a business man, and was greatly respected for his courtesy and high character. Mr. Shivas took part in several social movements in the town and was a prominent Freemason. He is survived by Mrs. Shivas, one daughter, and a son who is in America.

James Thomson.—It is with regret that we learn of the sudden death, on November 28, of Mr. James Thomson, retired nurseryman and seedsman, Kelso. Mr. Thomson was for many years well-known as manager of the firm of Messrs. Stuart and Mein, at Kelso. He afterwards held an appointment in Manchester, but returned to Kelso some years ago, when he retired from active business. His death was quite unexpected, as he appeared to be in good health up to the morning of his demise. Mr. Thomson, who was held in high esteem by all who had the pleasure of his acquaintance, was over seventy years of age.

TRADE MARKS.

The following list of latest Trade marks published is specially prepared for *The Gardeners' Chronicle* by Messrs. Rayner and Co., Registered Patent and Trade Mark Agents, of 5, Chancery Lane, London, who will give all information free regarding the registration of British and foreign Trade Marks.

CUTRALOL.

459,687.—Chemical substances used for Agricultural, Horticultural, Veterinary and Sanitary purposes.—Actien-Gesellschaft Fur Anilin-Fabrikation, An der Treptower Brucke, Berlin, Germany. November 18, 1925.

BLUE MURDER.

462,739.—Insect and Vermin Destroying Preparations.—S. Bowley and Son, Ltd., Wellington Works, Wellington Road, Battersea Bridge, London, S.W.11. November 18, 1925.

EMULITE.

459,430.—Chemical Substances used for Agricultural, Horticultural purposes.—Carl Arent Heilmann, 3, Vestergade, Skelsker, Denmark. November 11, 1925.

CATTEROOT.

463,047.—Insecticides.—Abol, Ltd., Beltring, Paddock Wood, Kent. November 11, 1925.

The above Marks have been "accepted" by H.M. Patent Office, and unless any objection is lodged the Marks will be duly Registered.

GARDENING APPOINTMENTS.

Mr. J. M. Richards, for the past fourteen years gardener to LT.-COL. FAIRFAX RHODES, Brockhampton Park, Andoversford, Gloucestershire, and previously five years General Foreman at Greyynog, Newtown, Montgomeryshire, as gardener to Mrs. W. SCULLY, Cowley Manor, Cheltenham, Gloucestershire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. C. Cornwell, for the past seven years gardener to A. J. YORKE, Esq., at Norton Park, Dartmouth, and Hamble, Hampshire, as gardener to CAPT. W. HANNAY, Spring Hill, Moreton-in-Marsh, Gloucestershire. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. H. S. Kemp, of Brampton Hall, Halesworth, Suffolk, and previously at Hurts Hall, Saxmundham, Suffolk, as gardener to H. GORE LLOYD, Esq., Hampton Court House, Hampton Court, Middlesex.

Mr. J. Nation, as gardener to CAPT. WARING, The Moot, Downton, Salisbury, Wiltshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.)

Mr. A. Shakelton, formerly gardener to MAJOR J. A. C. HAMILTON, Fyne Court, Bridgwater, as gardener to CAPTAIN H. C. R. BROCKLEBANK, R.N., Nash Court, Marshull, Dorset.

MARKETS.

COVENT GARDEN, Tuesday, December 1st, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

Adiantum	s. d. s. d.	Erica gracilis	s. d. s. d.
cuneatum	per doz. ... 10 0-13 0	48's per doz. 24 0-30 0	
—elegans	per doz. ... 10 0-12 0	—nivalis, 48's	
Aralia Sieboldii	per doz. ... 9 0-10 0	per doz. ... 24 0-36 0	
Araucarias, per			
doz. ...	30 0-42 0		
Asparagus plu-			
mosus	per doz. ... 12 0-18 0		
—Sprengeri	per doz. ... 12 0-18 0		
Aspidistra, green	per doz. ... 36 0-60 0		
Asplenium, per			
doz. ...	12 0-18 0		
—32's ...	24 0-30 0		
—nidus ...	12 0-15 0		
Cacti, per tray			
—12's, 15's ...	5 0-7 0		
Chrysanthemums, pot			
grown, in variety, 48's, per			
doz. ...	15 0-24 0		
Crotons, per doz.	30 0-45 0		
Cyclamens, 48's			
in variety, per			
doz. ...	24 0-30 0		
Cyrtomium ...	10 0-25 0		

Cut Flowers, etc.: Average Wholesale Prices.

Adiantum deco-	s. d. s. d.	French Flowers—	s. d. s. d.
rum, doz. bun.	9 0-10 0	—Narcissus	
—cuneatum, per		Paper White,	
doz. bun. ...	6 0-9 0	per doz. bun.	5 6-6 6
Arums (Richar-		—Narcissus	
dias) per doz.	8 0-10 0	Soleil d'Or,	
Asparagus plu-		per doz. bun.	4 0-5 0
mosus, per		—Parma Violets,	
bun., long		per bun. ...	5 0-6 0
trails, 6's,	2 0-3 0	—Ranunculus,	
med. sprays	1 6-2 6	scarlet, per	
short ...	0 9-1 3	doz. bun. ...	6 0-8 0
—Sprengeri, per		—carmine, per	
bun. ...	1 6-2 0	doz. bun. ...	5 0-6 0
long sprays...	1 6-2 0	—orange, per	
med. ...	1 0-1 6	doz. bun. ...	10 0-12 0
short ...	0 4-1 0	—Chillies, per	
Bouvardia,		pad ...	5 0-6 0
white, per		—Solanum	
doz. bun. ...	15 0-18 0	berries, per	
Camellias, white		pad ...	10 0-12 0
per box, 12's	3 0-3 6	Gardenias, per	
Carnations, per		box, 12's, 18's	10 0-12 0
doz. blooms...	3 6-4 6	Heather, white,	
Chrysanthemums		per doz. bun.	10 0-12 0
—white, large		pink, per doz.	9 0-12 0
blooms, per		—Honesty, per	
doz. ...	5 0-6 0	doz. bun. ...	18 0-30 0
—yellow, large		Hyacinthus, Roman,	
blooms, per		per doz. bun.	24 0-27 0
doz. ...	5 0-6 0	—12's ...	24 0-27 0
—pink, large		Lilac, white, per	
blooms, per		doz. sprays ...	8 0-9 0
doz. ...	5 0-6 0	Lilium longiflorum	
—bronze, large		long, per doz.	4 0-5 0
blooms, per		—speciosum	
doz. ...	4 0-5 0	album, long,	
above colours—		per doz. ...	4 0-5 0
—medium blooms,		per doz. ...	4 0-5 0
per doz. ...	4 0-4 6	—speciosum	
—white spray		rubrum, long,	
per doz. bun.	18 0-24 0	per doz. ...	3 6-4 0
—yellow, spray,		blooms ...	2 0-2 6
per doz. bun.	18 0-24 0	—short, doz.	
—pink, spray,		blooms ...	30 0-36 0
per doz. bun.	18 0-24 0	Lily-of-the-Valley,	
—bronze spray,		per doz. bun.	30 0-36 0
per doz. bun.	15 0-18 0	—Cattleyas, per	
Croton leaves		doz. ...	24 0-30 0
per doz. ...	1 9-2 6	—Cypripediums	
Daffodils, single,		per doz. ...	5 0-7 0
per doz. bun.	30 0-36 0	Pointsettia, per	
Fern, French,		doz. blooms	18 0-24 0
per doz. bun.	10 0-12 0	Roses, per doz.	
French Flowers—		blooms, Rich-	
—Acacia (Mi-		mond ...	6 0-8 0
mosa) per doz.		—Liberty ...	6 0-8 0
bun. ...	12 0-15 0	—Madame	
—Anemone De		Butterfly ...	6 0-8 0
Caen, per doz.		—Madame Abel	
bun. ...	15 0-18 0	Chateaux ...	4 6-6 0
Eucalyptus, per		—Melody ...	6 0-8 0
pad ...	5 0-6 0	—Molly Sharmar	
—Marguerites,		Crawford ...	3 0-4 6
yellow, per		—Ophelia ...	6 0-8 0
doz. bun. ...	2 6-3 0	—Sunburst ...	6 0-8 0
		Smilax, per doz.	
		trails ...	2 0-2 6
		Violets ...	3 0-6 0

REMARKS.—Trade shows very little improvement on that of last week. Lilium longiflorum has been offered at reduced prices but Richardias (Arums) remain firm in price as supplies are still limited. Lily-of-the-Valley is also dearer. Amongst Chrysanthemums bunched spray white appears to be the best selling line; good coloured sorts are scarce but there is no particular demand for them at present. Disbudded blooms are somewhat limited in number and vary in price according to their quality.

Roses show little change, supplies are very uncertain and prices will remain firm for home-grown blooms. The supply of Carnations appears to be sufficient for the moderate demand. The newest arrivals in this department are Roman Hyacinths and Polsetias. White Lilac from Holland is much improved in quality, and the supplies are sufficient for present demands. Consignments of French flowers have been very irregular during the past week. Paper White Narcissus, Mimosa, and Scarlet Ranunculus are realising better prices. Other subjects include double and single Anemones, Marguerites, Narcissus Soleil d'Or, Carnation, Saffron, Frau Karl Druschki and Ulrich Brunner Roses, single Violets, large bunches of Parma Violets, pads of Eucalyptus, Myrtle, Ruscus, and French Ferns, Solanum berries and Chillies.

Vegetables: Average Wholesale Prices.

Asparagus—	s. d. s. d.	Lettuce,	s. d. s. d.
—Paris Green...	8 0-9 0	—French Cos,	
—Spruce ...	1 3-1 6	per doz. ...	6 0
Batavia ...	2 0-2 6	Mushrooms,	
Beans—		—French ...	1 6-2 6
—French, per		cups ...	3 0-4 0
basket ...	4 0-6 0	—Broilers ...	1 6-2 6
—Madiera, per		Onions—	
basket ...	2 6-6 0	—Dutch ...	7 0-7 6
—Forced, per lb	—	—English, per	
Finest ...	2 6-3 0	cwt. ...	8 0-9 0
Best ...	1 6-2 0	—Valencia ...	9 0-10 0
Beets, per cwt.	6 0-8 0	Parsnips, per	
Cabbage, per		cwt. ...	6 0-7 0
tally ...	6 0-10 0	Potatoes—	
Celery, per doz.		—King Edward,	
fans ...	16 0-30 0	per cwt. ...	6 0-8 0
Cauliflowers, per		—others ...	5 0-6 0
doz. ...	2 6-4 6	New Potatoes—	
Carrots, per bag	6 0-9 0	—Guernsey ...	0 4-0 8
Chicory, Belgian		Seakale, per	
per lb ...	0 2-0 3	punct ...	2 6-3 0
Cucumbers, per		Sprouts, per	
doz. ...	15 0-18 0	bag ...	3 0-4 6
Dutch Onions...	8 0-9 0	Savoy, per doz.	1 6-2 6
Endive, per doz.	2 0-3 0	Tomatoes, English,	
Horseradish, per		per strike—	
bundle ...	1 8-2 0	—pink, new crop	6 0-9 0
Lettuce, per doz.	—	—pink, old crop	2 0-3 0
—cabbage, per		—blue ...	1 0-5 0
crate ...	3 0-6 0	—C a n a r y	
Mint, forced ...	6 0-8 0	Island ...	15 0-20 0
		Turnips, per cwt.	5 0-6 0

Fruit: Average Wholesale Prices.

Apples, English,	s. d. s. d.	Grapes, per lb—	s. d. s. d.
per 4-sieve		Alicante ...	1 3-2 6
—Cox's special	10 0-15 0	—Guernsey ...	0 10-1 6
—best ...	6 0-8 0	—Colmar ...	1 6-3 6
—others ...	3 0-4 0	—Muscat ...	3 0-6 0
Allington ...	2 0-4 0	Almerian,	
—Ribston Pippin	4 0-5 0	per barrel ...	17 0-24 0
Apples, Cooking—		Belgian—	
—Bramley's		—Muscats ...	2 6-3 6
Seedling ...	4 0-7 0	—Black ...	1 3-2 0
—Lane's Prince		Grape Fruit,	
Albert ...	4 0-6 0	—Jamaica ...	16 0-18 0
—Blenheim		—Isle of Pines	22 0-24 0
Pippin ...	4 0-7 6	—Florida ...	27 6-32
Apples, American		Lemons, Messina,	
Jonathan ...	13 0-14 0	per box ...	16 0-22 0
—Oregon ...	14 0-17 0	—Malaga ...	18 0-22 0
—Californian ...	13 0-15 0	Nectarines, per	
—Newtown ...	—	doz. ...	6 0-18 0
—York Imperial		Pines ...	2 0-5 0
barrels ...	26 0-30 0	Peaches, English,	
Apples, Nova		per doz. ...	8 0-18 0
Scotia ...	—	Pears, Doyenné	
—Ribston ...	16 0-22 0	du Comice,	
—King's ...	18 0-25 0	per doz. ...	4 0-8 0
—Blenheim,		Californian—	
barrels ...	21 0-22 0	—D'Anjou ...	23 0-24 0
Bananas ...	17 0-27 6	—Nells ...	25 0-26 0
Chesnuts,		—Comice, per	
Italian, per		case ...	16 0-18 0
bag ...	30 0-32 6	—Kelfer, per	
—French, per		barrel ...	28 0-30 0
bag ...	15 0-22 0	South African	
Cobnuts, per lb	1 2-1 3	Oranges ...	12 0-20 0

REMARKS.—Although very cold weather is not considered favourable for the fruit trade, business has seemed a shade better during the past week. Imported Apples are plentiful and not selling very freely. There is a slightly improved inquiry for large home-grown fruits of Bramley's Seedling and also for best Cox's Orange Pippin. Grapes are moderately plentiful and selling at reasonable figures. Bananas are quoted higher than last week. Choice Pears from California such as Doyenné du Comice, Winter Nells and Beurre d'Anjou are selling slowly. All nuts are in demand, except perhaps kiln-dried Walnuts which seem rather easier in price. A few English Tomatoes are still being marketed, but except for well-coloured new crop fruits there is practically no demand. Cucumbers are scarce and dear. Forced Peas and Beans from Guernsey are selling at somewhat exclusive figures. New Potatoes, however, are not so keenly enquired for. Mushrooms are in short supply but their prices are not excessive, sample supplies from Paris probably being responsible for their comparative cheapness. Beans from Madeira are plentiful and have been arriving lately out of condition. Salads are in fairly good demand. Green Vegetables are at a firmer price level owing to the severe weather. The Potato trade is fairly good, best samples selling at firm prices.

GLASGOW.

BUSINESS in the cut flower market was slow during the past week and prices of Chrysanthemums reacted from the previous high levels. Special blooms of H. W. Thorpe were worth from 1/- to 1.4 for 6's, ordinary blooms 8d. to 1/-; Florrie King, special 9d. to 1/-, medium 8d. to 9d.; Sunshine 8d. to 1/-, William Holmes, special 10d. to 1.2, medium 6d. to 10d.; Source d'Or 6d. to 9d. and Blanche Poitevine 8d. to 10d. Exceptionally fine blooms of Jean Pattison kept firm at 10d. to 1.3, while sprays made 3d. to 1/- according to size. Prices for Lilliums remained steady, while Richardias (Arums) were worth from 4/- to 6/-. Lillium longiflorum (Harrisii) realised from 4.6 to 5.6 and L. lancifolium rubrum 2.6. Carnations and Roses further advanced in value, the former ranging from 4/- to 6/- per dozen and the latter (Ophelia and Madame Butterfly) from 6/- to 8/-. Narcissi were dearer at 16/- to 20/- per cane, but Parma Violets were cheaper at 4/- to 4.6, and English Violets reflected little change at 2/- to 2.6. First consignments of French Ranunculus sold at 1.3 to 1.6 for Romans and 6d. for Carmine. Smilax varied from 1/- to 1.6 and Asparagus from 6d. to 1.3. Solanums rose to 14/- per cane, and Honesty averaged 2/- to 2.6 per bunch.

There was a distinct falling off in the volume of business transacted in the fruit department. The decline in available stocks of American Apples was reflected in the firmer prices of case fruit, which were quoted as follows:—Cox's Orange Pippin 17/- to 19/-, Delicious 15/- to 17/-, Winesap 14/- to 17/-, Jonathan 14.6 to 17/-, Newtown 14/- to 14.6, Grimes' Golden and Winter Banana, 12.6 to 14.6, Bartlett Apples, however, were in less demand, and their values displayed a lower tendency at the following quotations:—Canadian: King's, Grade I, 28/- to 33/-; Grade II, 22/- to 28/-; Nells, Grade I, 28/- to 32/-; Grade II, 23/- to 28/-; Baldwin, Grade I, 25/- to 30/-; Grade II, 21/- to 26/-; Stark, Grade I, 24/- to 28/-; Grade II, 22/- to 24/-; Greenings, Grade I, 33/- to 35/-; Grade II, 26/- to 29/-; Virginia: York Imperial and Rome Beauty, 28/- to 32/-; Ben Davis, 22/- to 25/-; and Jonathan, 30/- to 36/-. English Bramley's Seedling sold at 14/- to 18/- per cwt., Lane's Prince Albert at 14/- to 16/-, and Bismarck at 13/- to 16/-. Pears were obtainable in greater variety. Prices for Californian Winter Nells ranged from 27/- to 30/- per case; Washington, ditto, 24/- to 28/-; Oregon Doyenné du Comice, 28/- to 30/-, and Beurre d'Anjou, 24/- to 28/-. Other fruits may be quoted thus:—Grape Fruit, 24/- to 26/-; Jamaica Oranges, 18.6; Malaga (420), 18/-; Canary, 22/-; Messina Lemons, 10.6 to 12.6; Tripoli, 14/- to 15/-; English Gros Colmar Grapes, 1.6 to 2.6; and Scotch, 1.6 to 3/-.

In the vegetable market French Cauliflowers realised 4/- to 5/- per dozen, Lettuces 1.3 to 1.6, Leeks 3/- to 7/-, Madeira Beans 4/- to 5/- per chip, Horse Radish 2/- per bunch, Celery 2.6, Endive 2.6 per dozen, Flagelette Beans 1.6 per box, Celeries 3/-, Scotch Tomatoes 9d. to 11d. per lb., and Tenerife Tomatoes 16/- to 26/- per bundle.

ANSWERS TO CORRESPONDENTS.

DYED POPPY HEADS. G. F. C. The Poppy heads, when thoroughly dry, are dyed with aniline dyes which are purchasable through most oil and colour merchants. We may add that the dyed Poppies usually seen at this time of year are from Austria or Germany.

MUSHROOMS FAILING. C. W. S. It is difficult to account for the failure of your Mushroom beds. Naturally, the poor feeding of the horses will make the manure poorer, but this is not enough to cause a complete failure. In preparing the material, all litter less than nine inches in length should remain, and should be turned every other day for a week, or until it sweetens. At this season of the year beds should be fifteen inches deep, and, above all, be made firm. Spawning should not be done until the heat has declined to 75°. If the surface of the bed has become too wet, the top few inches should be turned upside down before being spawned, and cased over afterwards, making it very firm. Avoid the use of too much artificial heat and so reduce the need for much watering. The most productive beds are those that retain sufficient moisture for a long period, and the first to fail are those that rapidly dry out. If they are inclined to dry out quickly, cover the beds with straw litter, the soil may safely be moistened with warm, weak, salt water, through this, if considered necessary.

NAMES OF PLANTS.—A. T. S. 1, Olearia macrodonta; 2, Eucryphia cordifolia; 3, Escallonia Balfouri; 4, Colletia cruciata; 5, Myrtus Ugui; 6, Myrtus bullata; 7, Metrosideros lucida; 8, Azara Gilliesii; 9, Phygadeuon capensis; 10, Escallonia montevideensis; 11, Styax japonica; 12, Tricuspidaria lanceolata.

Communications Received.—H. S. K.—G. B.—S. L. W. B.—H. C.—G. H. F.—Dr. P.—O.—Mrs. C.—S. B. D.

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 40.1°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 9, 10 a.m. Bar. 29.8. Temp. 46°. Weather Sunny.

Frost
in the
Garden.

AFTER the open winters of the last few years gardeners may well feel apprehensive of the damage which is likely to be done if the frosts already experienced become more severe. It is true that so far, at all events in the south, the good that the frosts have done far outweighs the harm; but as with men, so with frosts—the evil that they do lives after them and it is yet too soon to say whether, so far, any permanent harm has in fact been done. Even in the present premonitory phase the frost is teaching the young gardener many a useful lesson. Thus, for example, one of the recent recruits to gardening observed to the writer that not a few of his shrubs on a north slope seemed to be much more tolerant of the recent frosts than are others with a full south aspect. The gardener old in experience and in years knows many an example of this kind of behaviour. Even those who lack both years and experience may acquire like knowledge by reading, for example, that admirable work on the *Theory and Practice of Horticulture* by John Lindley. Despite what laboratory botanists may say, it is true that it is the hot sunshine after a severe frost which is the greatest destroyer of plants. Although science is still uncertain of all the details of how the killing by frost is effected, practice

is well aware that if a plant which has been exposed to frost can be protected from the early rays of the morning sun, it may suffer no permanent ill-effects. The gradualness of the present frosts may perhaps mitigate the evils which more violent successors—if they come—may do. For, as the experience of hardening plants off teaches and as experiment has shown, a plant may become presently more tolerant of cold if it has been already and recently subjected to low temperatures. Naturally, the tolerance varies from plant to plant and any attempt to harden a really tender plant so as to make it frost-resistant would no doubt be attended by fatal consequences. Although but little is known of the physiology of resistance to cold it seems probable that trees and evergreen shrubs and herbs possess an automatic power of increasing their resistance to frost. In the former there is a regular changing over from starch to sugar in the tissues whenever the temperature falls within a few degrees of freezing point, and similarly, in the evergreen herbs of cold countries—Norway, for example, it is found that the green leaves which resist frost are rich in sugar. The explanation advanced to account for the protection which seems to be afforded by the occurrence of large quantities of sugar in the sap is somewhat recondite. Thus, it is known that in severe frost the living membranes of cells become destroyed. Now these membranes, like protoplasm in general, contain proteins. Proteins exhibit the power of passing out of solution and becoming precipitated when water is withdrawn from the cell substance—as it is during frost. This salting-out of proteins, as it is called, may be illustrated by adding solid sulphate of ammonia to the beaten-up white of egg. Certain substances delay the salting-out or precipitation of proteins and among them is sugar. Herein, according to this hypothesis, lies the advantage of the transformation of starch (or oil) into sugar, which undoubtedly occurs in many plants when the temperature falls. Of all the strange things which frost reveals the strangest this year is the refusal of leaves of Elm and Oak to be hurried in their fall. The leaf of Hornbeam has fallen prematurely before the icy touch of winter. Beech in exposed places also lost some of its leaves earlier than usual, but the landscape which provokes this comment is still russet and pale yellow-brown with the leafage of Elm and Oak. Gardeners who are late—and in this imperfect world what gardener is ever quite up to the time table he carries in his head—will do well to bestir themselves. Gladioli may be still in the ground. Last year they took no harm all the winter through. This year is like to be a more testing time, and if such things cannot be lifted some loose protection should be given to the ground in which they lie. So it is also with many other plants which older generations of gardeners used to lift; *Lobelia cardinalis* is an example. It lies beneath a thick layer of ashes and litter, but whether it will survive is yet to know. "Litter" is the prescription for all things that we prize and are likely to suffer, and particularly for recently planted or transplanted subjects. We have ourselves in former years saved many young Coniferous trees planted in the autumn because spring planting is so precarious—by lining them round with loose Bracken. The choice *Rhododendrons*, if not already well blanketed with leaves, had best receive that attention now. But of all garden operations which need to be pressed on with where soil con-

ditions allow of their being done, the most important is digging. Those whose land is on the heavy side have had a series of relatively bad years; autumns when stickiness prevented early digging, and they may take full advantage now before the frost has got too deeply into the ground. If they have done the work already, gardeners will experience the unusual pleasure of finding the top soil weathered by the frost so that it crumbles at a touch to the finest of tilths. Frost, indeed, is the greatest benefactor of heavy land—lime not excluded. It was knowledge of that fact which led old Fuller to panegyric on the beneficence of digging. Nor, in casting the balance sheet of profit and loss, must sight be lost of the pest-ridding effects of frost. Yet on the other side of the account the gardener would be wise to keep a watch on the birds, for they may be likely to find new means of mischief in the way of disbudding if attention is not paid to them—and, indeed, even if it is. In the final casting of gain and loss no true gardener will omit from the account the imponderable asset of beauty with which frosts endows the garden. For surely when the jewelled rime besets the leaf edges of *Berberis* and *Cotoneaster* and makes of the Brooms sheaves of shining spears and lays white carpets on the paths and lawns, the garden becomes a very fairyland of loveliness. For though frost which takes the life of a plant takes from it its beauty also, it serves but to embellish those plants which it is powerless to destroy, and when it goes they are none the worse for its embrace.

Our Almanac for 1926.—The *Gardeners' Chronicle Almanac*, giving the dates of the principal flower shows in Great Britain, and the meetings of horticultural and botanical societies, is now being prepared, and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send information of the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Wembley Finance.—The auditors of the British Empire Exhibition at Wembley have issued a statement of accounts which shows that there will be a deficiency of not less than £1,581,905 2s. 1d. The capital expenditure amounted to £2,739,594 5s. 4d., and of this sum landscape-gardening and lakes were responsible for £108,640 6s. 11d. The upkeep of the exhibition was very costly and a total of £147,622 13s. 6d. was spent in maintaining the buildings, roads, grounds and gardens. The loss in the first year was £1,842,806, but a profit of £159,304 was made in 1925.

Legacy to a Gardener.—The Rt. Hon. J. Fellowes, seventh Earl of Portsmouth, who died on September 7, bequeathed a sum of £300 to his gardener, Mr. Frank Stentiford, if still in his service.

Memorial Service to the late Mr. W. R. Dykes.—A memorial service to the late Mr. W. R. Dykes was held on Friday, the 5th inst., in St. Stephen's Church, Rochester Row, within a stone's throw of the Royal Horticultural Society's Hall. The service was conducted by the Vicar of St. Stephen's, the Rev. Shipley Smith, and at the conclusion of the proceedings the Dead March was played. The nave was filled with those who came to pay their last tribute to the memory of this distinguished horticulturist. Unfortunately, the weather was very unfavourable; a dense fog prevailed and the weather was intensely cold. Because of this, the President of the Royal Horticultural Society, Lord Lambourne, was unable to be present. Most members of the Council, however, attended.

Amongst those present were Sir William Lawrence (Treasurer of the Royal Horticultural Society), Mr. C. T. Musgrave, Dr. A. W. Hill, Mr. E. A. Bunyard, Mr. T. Hay, Mr. A. Grove, Mr. W. A. Binley, Mr. G. W. Loder, the Hon. H. D. MacLaren, Mr. E. Laxton, Sir Daniel Hall, Professor Bateson, Mr. W. J. Bean, Mr. W. Wallace, Mr. R. W. Wallace, Mr. C. G. A. Nix, Mr. Simmons (Assistant Secretary), Mr. F. Reader, and other members of the Vincent Square staff; Mr. F. Chittenden, Mr. D. McDonald, Mr. G. J. Ingram, Mr. P. Murrell, Mr. R. C. Notcutt, Mr. S. W. Hale (Secretary of the Chamber of Horticulture), Mr. D. B. Crane, representing the National Chrysanthemum Society, and Mr. Geo. F. Tinley (*The Gardeners' Chronicle*).

Trials of Roses for Garden Decoration at Wisley.—The Director of the Royal Horticultural Society's Gardens at Wisley requests us to remind raisers of Roses of the trials in progress in the Royal Horticultural Society's Gardens. Six plants of each new variety should be sent to him so soon as possible, addressed, The Director, R.H.S. Gardens, Wisley, Ripley, Surrey. (Station: Horsley, S. Rly.). The necessary entry forms and further information may be obtained from him on application.

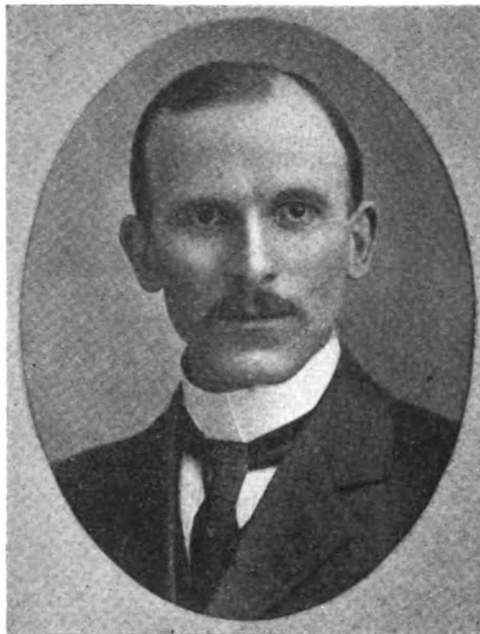
Holly, Mistletoe and Christmas Trees.—Covent Garden contains abundant evidence of the imminence of the Christmas season. British-grown Christmas trees are plentiful, and represented by tiny specimens barely eighteen inches high, up to big fellows twenty feet high. Notwithstanding the frequent observation that the Christmas tree is a "back number," so far as Yuletide festivities are concerned, we learn that sales are quite up to the average. Mistletoe from France is arriving in fine condition, and the samples already offered have been abundantly berried. Holly, both British and French, green and variegated, is offered for sale, but there appears to be a shortage of the popular, deep red berries. The general opinion is that finely-berried Holly will sell at high prices ere Christmas arrives.

Scotch Potato Crops.—In a preliminary statement showing the estimated total produce of the crops in Scotland during 1925, the Board of Agriculture has put the weight of the Potato crop at 995,000 tons, representing an increase of 150,000 tons, or 17.8 per cent over that of last year. This result, however, is principally due to the extended area under cultivation, which was 3,874 acres greater than in 1924, and brings up the total to 142,155 acres, making the yield seven tons per acre, or an increase of 0.9 ton on the year, and 0.5 ton on the average of the past ten years. The crop is reported to be unusually free from disease.

Honor for a French Horticulturist.—We learn from our contemporary, *L'Horticulture Française*, that M. J. Pinelle, the Director of the Versailles Horticultural College, has been made a Chevalier of the Legion of Honor. This well-deserved distinction is bestowed in recognition of the great services rendered to the cause of horticulture by M. Pinelle. Since he succeeded M. Nanot at Versailles, he has shown remarkable energy and devotion, and has obtained excellent results.

Award of the "White" Medal.—The Massachusetts Horticultural Society has awarded the George Robert White Medal of Honour for 1925 to Prof. Ulysses P. Hedrick. This medal is considered to be the highest horticultural honour which can be conferred in America. Prof. Hedrick is reputed to be the greatest authority on fruits and fruit-growing in the United States and has done more than any other man to promote the development of new and improved varieties. He is the author of several pomological works, including *The Grapes of New York*, *The Plums of New York*, *The Cherries of New York*, *The Peaches of New York*, *The Manual of American Grape Growing*, *The Cyclopedia of Hardy Fruits*, and *Systematic Pomology*.

Mr. J. Dyfri Jones.—Few gardeners have had the advantage of an early scholastic training, but Mr. J. D. Jones, of Bournville, is one of the few. He commenced his business life as a pupil teacher in the Elementary Day School at Llandovery, Carmarthenshire, a position he filled for three years. Turning his attention to gardening he was fortunate in serving under Mr. E. Nowell, a fine landscape gardener as well as a capable cultivator, who was gardener to J. C. Vaughan Pryse-Rice, Esq., at Llwyn-y-brain, Llandovery. Here Mr. Jones remained for four-and-a-half years, gaining valuable practical experience in all branches of his chosen profession. From Llandovery he entered service as foreman to Miss Massey, The Dale, Chester, where Mr. B. Moore was gardener. From Chester Mr. Jones moved to Kew, where he spent four-and-a-half years, and was a departmental sub-foreman for three years of that period. He was particularly successful at Kew, securing first position in three out of the four courses of lectures given to the students,



MR. J. DYFRI JONES.

and helping the late Mr. W. Watson, then curator, in the compilation of several of the *Kew Hand Lists*. His next appointment was as Instructor in Horticulture under the Worcestershire County Education Committee, where he remained for eight years. For two years he was part-time lecturer and instructor in Horticulture for the West Bromwich authorities, lecturing and demonstrating to day school teachers only. These various appointments proved excellent training for the position Mr. J. D. Jones has occupied so successfully for the past twenty-five years, i.e., that of Superintendent of the Garden Department and Manager of the Nursery for the Bournville Village Trust. It was in September of the present year that Mr. Jones completed twenty-five years' service, and on that occasion received the special thanks of the Trustees for the splendid work he had accomplished. In conveying their thanks the Chairman of the Trustees wrote: "It is of great interest to recall the appearance of the village, and other parts of the estate at the time when you came to Bournville, and see the result of the planting done in the early years. The appearance of the village is a matter of pride and pleasure to all of us, and it is obvious from your careful supervision that you share these feelings. I should like to add the sincere thanks of the Trustees for the work you have done in making Bournville what it is to-day." Mr. Jones' activities are not confined to the supervision of the Bournville gardens and estate. For eighteen years he has been Lecturer and Tutor

in Horticulture to the Fircroft College, Bournville, a residential settlement for the higher education of working men; and for twelve years has been Lecturer, Instructor and Advisor in Horticultural matters to the Birmingham Education Committee. All old Kewites and others who have enjoyed Mr. Jones' friendship, are delighted with the success he has achieved and the fine work he has accomplished at Bournville, and they are well aware that he thoroughly deserves all the congratulations he has received. Evidence of the hard work and close study Mr. J. D. Jones gave to his chosen profession in his earlier years is to be found in the eleven Science and Art Diplomas he has won from the Board of Education, including those for agriculture and botany. In addition to his business interests, Mr. Jones finds time for work in connection with Stretchley Church, of which he has been Secretary since 1904.

Gladioli for Christmas.—Although Gladioli are coming into Covent Garden flower market from the south of France, the spikes are of poor quality. It is possible that there will be Gladioli for Christmas, but so far as we are aware, the leading growers of cut flowers have not devoted much attention to the provision of Gladioli for the festive season. In the United States of America certain florists have kept the corms in cold storage during spring and summer, planting them, for forcing, in August and September to produce flowers for Christmas. One grower who adopted this method was able to cut spikes in November, and asserted that with proper co-operation between growers and florists, there should be no difficulty in having millions of Gladioli spikes for Christmas!

A New Form of *Euonymus radicans*.—A variety of *Euonymus radicans*, named *colorata*, is offered for sale by a Rhode Island, U.S.A., nurseryman. The plant is said to have been first introduced into the United States by the Arnold Arboretum, and is perfectly hardy. It is a vigorous, large-leaved variety, the foliage being an intense green in summer, but at the first frost it turns to a bright red and bronze, and this tinting is said to be retained by the plant, which is evergreen, until the warm weather in spring.

Covent Garden Flower Market.—We understand that from Monday to Thursday inclusive, in Christmas week, each morning will be a full market morning in Covent Garden Flower Market, and that after the market is closed on Christmas Eve it will not be re-opened until Tuesday, December 29.

Manure for Sugar Beet.—In Sugar Beet top-dressing trials at Kesteven, a mixture of 4 cwt. of superphosphate, 2 cwt. of muriate of potash, and 2 cwt. of nitrate of soda, after singling, yielded 14 tons, 7 cwt. 6 lbs. per acre. The percentage of sugar in the roots was 17.0.

Tree Planting at Aberdeen.—Following a report by Mr. William B. Clark, superintendent of public parks, Aberdeen, the Links and Parks Committee of the Town Council recommend that he be authorised to plant trees on six acres of ground on the Hazlehead estate, the most recently acquired public park for Aberdeen. The area in all set aside for this purpose amounts to about forty-four acres, and the cost is estimated at £812, made up as follows:—127,300 trees, £254; planting, £212; and drainage work, £346. Application is to be made in due course for a forestry grant in respect of the planting, and for an unemployment grant in respect of the drainage.

Chrysanthemums at Hesketh Park, Southport.—There has been a great increase in the number of Chrysanthemums displayed by the Southport Corporation at Hesketh Park this year. The Parks Superintendent, Mr. W. Clark, has made a special feature of these popular autumn and winter flowers, no fewer than three-thousand plants in about one-hundred-and-sixty varieties being grown. As it was impossible to house anything like the whole of the collection in the large conservatory, an additional display has been provided in one

of the new large greenhouses recently erected in Hesketh Park. The varieties shown in the illustration (Fig. 189) include:—Edith Cavell, General Petain, Majestic, Mrs. R. C. Pulling, Mrs. Spencer Chichester, Mrs. Charles Davis, Norman Chittenden, W. Mease, Victory, Ada Brooker, Mrs. B. Carpenter, and Percy Dove. The residents of Southport have shown their appreciation of the splendid floral display provided by the Corporation by attending in large numbers; they have also expressed their appreciation of Mr. Clark's skill in cultivating and arranging the Chrysanthemums.

The concluding R.H.S. and N.C.S. Meetings in 1925.—The final meeting and exhibition of the Royal Horticultural Society for the present year will be held at Vincent Square on Tuesday next, December 15, and the National Chrysanthemum Society's Floral Committee will hold its concluding meeting of the present season on

the authors, also tables showing the results of testing with and without the peel removed. A comparison of the difference between the tests made with and without the peel removed shows that, with the exception of McIntosh, every variety exhibited a greater difference, due to the skin when the fruit was soft, or in prime eating condition, than at the time of picking. In most cases the difference in the soft fruit, depending on whether or not the peel was removed, was practically double that found in fruit at picking time, showing that the skin tends to mask the softening of the fruit and that the tests with the skin intact portray the actual condition of the flesh much less accurately than those with the skin removed. The results recorded are averages of the determinations of twenty-five Apples, and the tests when the fruit was in prime eating condition were made on fruit of the same pick and from the same trees as that made at the time of picking.

not come up to its flavour and colour with me by one means, it must by another. Of the whole, vines with which I am acquainted, hardly two kinds require the same treatment, and yet many plant a collection in one house. Under such circumstances some must fail. For instance if Hamburgs and Muscats are planted in one house, to have them well flavoured and coloured you must shank the half of the Muscats, because the latter will not admit of the same treatment as the Hamburgs; and then, if you try to have your Muscats fine, you must be contented to have your Hamburgs badly coloured and ill-flavoured. Some may get good Grapes in this mixed way, and so do I by means of scheming and contriving; but I believe this to be one of the causes of so many complaints that are continually being made about failure in Grapes. I am of opinion that we have not gained anything on our forefathers in Grape growing. Some of them knew the nature of every vine



FIG. 189.—CHRYSANTHEMUMS IN THE WINTER GARDEN AT HESKETH PARK, SOUTHPORT.

Monday, December 14, at 3.15 p.m., at the Royal Horticultural Society's Hall.

A Mechanical Tester for Fruit Maturity.—Messrs. J. R. Magness and George F. Taylor, of the United States Department of Agriculture, have published* a description of a mechanical tester to determine the ripening of fruits, particularly Apples and Pears. It is a pressure tester, and the instrument measures the hardness of the fruit by determining the pressure required to force a rounded plunger of definite dimensions into the fruit for a certain distance. An apparatus of this character has been used to a limited extent for several years for determining the picking maturity of Pears in Oregon. The writers have used a small, modified form of this apparatus in the case of Apples and have found it to give an excellent index of the actual condition of ripeness of the fruits at any time during the storage period. Details, with illustrations of the fruit tester, are given by

* Circular 350. United States Department of Agriculture, Washington, D.C.

Appointments for the Ensuing Week.—Monday, December 14: United Horticultural Benefit and Provident Society's meeting; National Chrysanthemum Floral and Executive Committees meet. Tuesday, December 15: Royal Horticultural Society's Committees meet; Winchester Horticultural Society's meeting; Croydon Gardeners' Mutual Improvement Society's meeting. Thursday, December 17: Manchester and North of England Orchid Society's meeting. Linnean Society's meeting.

"Gardeners' Chronicle" Seventy-Five Years Ago.—*Vine Culture.*—It has been hinted that if you have your vine roots in a good border, you cannot fail to have fine Grapes; but a Yorkshire friend tells us we may always expect at times ill-flavoured and badly-coloured berries, with the best made borders, and under the very best management. If my employer were to walk through his vineries, and ask me if this house contained black Grapes, and I said that it did, I should not like to send crimson ones to his table in their place. If any Grape will

they grew; we seldom see fine Grapes shown early in the season at any of our great exhibitions; there was hardly a fine dish of Grapes at Chiswick in May last. If they were swelled, they were badly coloured, and not what might have been expected at such a place. It was very evident however, from the size of the berries, that the roots had done their part, and I venture to assert that more of the evil lies in mismanagement than in the borders. In conclusion, let me strongly recommend front vinery walls to be arched, and to have divisions inside, each division only to contain one kind of vine, which should be planted two feet inside the arch; and, above all, make yourself well-acquainted with the nature of the kind of vine you plant. Let your borders be made according to previous directions, given in this paper, maintain good management, and you will not fail. Let no one imagine that I allow any very sudden change of temperature to take place at any stage of the growth of the Grapes. D. Kidd, Gurnstone Park. *Gard. Chron.*, December 14, 1850.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Cypripedium.—The members of the cooler-growing section of this genus that produce their flowers at this time of the year are among the most useful Orchids in cultivation. Owing to their floriferousness and the lasting properties of their flowers, and considering the ease with which they can be grown, there are few plants comparable with them for a winter display. These beautiful plants have been greatly improved during recent years by hybridising. When in flower, these Orchids are far more effective when grouped by themselves than when mixed with other plants. *Cypripediums* resist fogs better than any other Orchids, a fact which causes them to be very popular with those who reside in or near large industrial towns. The plants are more or less in active growth all through the year, therefore they should never be allowed to remain dry at the roots for any considerable time. They should be examined frequently for the presence of thrips, as these pests quickly disfigure the foliage and weaken the plants if not quickly destroyed. After the flowering season is over the plants may be re-potted and given every encouragement to make healthy growth, as the stronger the plant the better will be the quality of the flowers the following season.

Miltonia.—Plants of *Miltonia vexillaria*, *M. Bleuana* and the many hybrids are producing plenty of new roots and growing freely; they should be afforded sufficient water to keep the *Sphagnum* moss on the surface in a fresh, growing condition. Grow them in the highest position possible near to the roof-glass in the intermediate house. During spells of cold weather, necessitating the use of much fire-heat, *Miltonias* are subject to attacks of yellow thrips, and periodical examinations should be made for these pests in the centres of the young growths. If a brown-looking outer sheath is observed to be clasping the base of the young shoots, causing the new roots to push upwards instead of growing down into the compost, it should be split and removed in small pieces without causing injury to the plants.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELYSDEN,
Pyrford Court, Woking, Surrey.

Iris unguicularis (stylosa).—It would be interesting to know what are really the essential factors in cultivation which ensure the successful flowering of this beautiful Iris, whose delightful flowers, so fair, so delicate and fragrant, are much appreciated at this season. I am inclined to think that dryness at the roots and partial starvation are the greatest factors. Its position here is at the foot of a south wall which is furnished with a collection of shrubs, and the treatment never varies. The Irises are planted in a continuous narrow border, and flower equally well whether near the stems of the shrubs or in the spaces the farthest removed from them. Flowering is usually abundant, and the period extends from October to April, but they have seldom flowered so freely so early in the year as in the present season. Since the first week of October I have gathered several dozen flowers weekly in spite of the comparative inclemency of the weather. Many of the shrubs on the wall overhang the Irises and protect the buds during frosty weather, so that their growth has not been much impeded though 14° of frost have been registered. For room decorations the flowers should be pulled just before the bud is ready to burst.

Arbutus.—This genus gives us several highly decorative plants for winter effect, and even

when the bright red fruits have passed they are appreciated for their beautiful foliage. They are peat-loving plants, needing an abundance of moisture, and should be given positions sheltered from north and east winds. *A. Andrachne* is one of the hardiest species, makes a handsome tree, and is one of the most desirable members of the genus. *A. Unedo* is at its best at this season, as it bears its flowers while the red fruits of the preceding year are still hanging. *A. U. rubra* is a beautiful variety with red flowers and regular growth, forming a round, well-balanced head. *A. Menziesii*, a north American species, is of free growth and bears large panicles of sweetly-scented flowers.

Protection.—The protection of plants from frost constitutes an important part of the gardeners' work at this season. We have already had enough frost to remind us that even if our climate has improved a little since the time of our forefathers, it is still not so genial as to permit of carelessness on the part of those whose business it is to keep guard over some of the rarer forms of ornamental vegetation. To protect plants from frost is a matter for exercising the best of talent, and no one responsible can afford to treat lightly the smallest aid in such work, or to ignore the principles on which protection must be founded: whatever the gardener's education, he must be a sage in the protection of plants from frost, as without good judgment the measures adopted may be destructive instead of protective. All protective measures are directed to the exclusion from plants of the stratum of air immediately above them, and the measures adopted to secure this aid are also more or less effectual in checking radiation of heat from below. One of the most effectual of non-conductors, and therefore one of the best of plant protectors, is dry air, hence mats, litter or leaves quite dry and laid on loosely so as to enclose dry, warm air within and amongst the materials, offer powerful aids to the cultivator in "keeping out" frost. Damp destroys by its rapid conduction of heat and is therefore an auxiliary of frost. When it is considered desirable to protect plants of doubtful hardiness, light canvas screens are much more suitable for the purpose than heavy woollen material; the latter quickly absorbs moisture and loses its protecting power, and if left for a long period, becomes a powerful agent in killing the plant.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Hardy Vines.—Vines trained on walls or on trellis work may be pruned so soon as the leaves have fallen. The method of pruning should be similar to that adopted for indoor vines. The laterals should be pruned to within two or three buds at the base. If extension of the plant is desired train the young growths to where they are required to furnish the space, and if the spurs on old vines are getting out of bounds young rods may be allowed to grow up from the base to take the place of the old ones. All rough bark may be rubbed off with the hand, and the rods cleansed with nicotine soap, using it a little under the usual strength to be safe, and taking care not to damage the buds. When the rods have been cleansed, return them to their positions. If the soil on the surface is sour, remove a few inches, apply a dressing of lime, and use a top-dressing of good loam and horse droppings.

Propagation and Treatment of Filberts.—These Nuts are fairly easy to increase for they may be propagated from suckers or layers, the latter method being often adopted. The layers will, in most cases, root in twelve months, when they may be transferred to the nursery quarters. So soon as they commence to grow freely, cut the centre out to within eighteen inches of the ground to form a bush with eight or nine leading shoots. These leading branches may be judiciously pruned annually, similarly to pruning Gooseberries and Red Currants.

All suckers that develop from the ground should be removed, unless wanted for increasing the stock. In propagating from suckers, select the strong, upright growths and cut them down to within eighteen inches of the ground level. They will form good bushes in one season, and the following winter they may be transferred to the nursery quarters. In about two years they may be transferred to their permanent stations, planting them about twelve feet apart each way. Nut trees, like most fruit trees, require root-pruning occasionally if growing very strongly, to encourage the development of fibrous roots. Grafting Filberts is practised to obtain a clear stem. Filberts do well in a rather dry, rich loam over a rocky, chalky and hard bottom. They are longer coming into bearing when planted on heavy loam resting on a clay subsoil.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Schizanthus.—The plants which were raised from seeds sown in August and September should now be ready for transference to larger pots. A compost of light, open material should be used. It should not be made rich, as it is desirable to keep the plants as sturdy as possible: feeding may be resorted to later when the pots have become well-filled with roots. Grow the plants near the roof-glass in a cool house where fire-heat is only used to exclude frost. The same treatment should be afforded *Clarkias* and other annuals of a like nature which are being grown for flowering in the greenhouse in spring.

Mignonette.—Plants which were raised from seeds early in August will be benefited if given a top-dressing of fibrous loam to which has been added some broken lime rubble and a little well-decayed manure. The soil should be pressed firmly about the plants, each of which should be supported to a neat stick. So soon as the plants show signs of flowering their growth should be stimulated by occasional application of soot-water and weak liquid manure. It is fatal to allow the plants to suffer from want of water at their roots.

Chrysanthemums.—When raising *Chrysanthemum* plants for the production of large blooms suitable for exhibition, it is important to make an early start, and the cuttings should be inserted from this date and onwards as they become ready. Strong, sturdy, but not coarse, cuttings, about three inches in length, should be chosen, and they may be placed either singly in thumb pots or three or four in a small sixty-sized pot. The soil should consist of equal parts of sifted loam and leaf-mould with a free addition of sharp sand and a little wood ash. The pots, soil and frames for the reception of the cuttings should be prepared in readiness before the latter are taken off, to prevent undue exposure and flagging, which would constitute a check to quick rooting. Press the soil firmly in the pots, using a blunt-ended dibber. Give the inserted cuttings a good watering before placing them in the propagating frames, which should be kept close until rooting has taken place. The glass lights may, however, be taken off occasionally to prevent damping of the cuttings, but these latter must not be exposed long enough to cause flagging.

Forcing.—At the time of writing these notes frost has been registered here on twenty-one consecutive days, the lowest reading being 18°, or 14° of frost. This spell of wintry weather has been fairly general. Plants intended for forcing will be materially benefited by the cold, as they will respond more readily to gentle forcing. Batches of Lilacs, *Azalea mollis* and other shrubs, as well as herbaceous *Spiraeas* and some of the prepared crowns of *Lily-of-the-Valley*, may now be introduced to the frames and pits prepared as advised in a previous calendar, a course which might not yet have been advisable had mild weather prevailed.

Euphorbia pulcherrima (Poinsettia).—Plants which have fully developed their bracts should be afforded a somewhat lower temperature and a drier atmosphere to prolong their usefulness. Feeding of the plants should be discontinued at this stage. Poinsettias are very susceptible to damage from sudden exposure to cold, and great care should be exercised when removing them from a warm house. When used in a cut state for vase decoration, on severing the stems from the plant the cut ends should be immediately dipped in hot water to prevent bleeding and ultimate flagging of the bracts.

FRUITS UNDER GLASS.

By F. STANTON, Gardener to MAJOR ALBERT PAM, Wormley Bury, Broxbourne, Herts.

Successional Vineries.—The washing and cleansing of successional vineries should be done immediately they are ready for this work. In pruning the vines, cut the shoot cleanly to a well-ripened bud. Paraffin emulsion is the best specific for the destruction of red spider and mealy bug, and it should be applied by means of a fairly stiff brush when the pruning is finished, and again after the house is cleansed. Should the growths be green and immature, the trouble will be generally found at the root. An excessively deep rooting-medium is not conducive to the production of Grapes of the highest quality, and steps should be taken to encourage surface rooting. Remove the old soil down to the roots and add a top-dressing of a rich, sweet compost. Outside borders should be protected from cold, wet weather by adding a good mulch of long litter and placing shutters or lights over the whole border. Ventilate freely houses in which the vines are resting, when the weather conditions permit. If the inside borders have been allowed to become dry after the ripening of the crop, give them a copious watering with tepid water on a fine morning and repeat this operation until the whole border is uniformly moist. Too much care cannot be exercised in the choice of plants brought into any fruit house after it has been cleansed and made ready for starting. Such plants as Freesias, Azalea mollis and shrubs for slight forcing, early vegetable seeds, etc., are quite safe, but do not introduce any subject that is likely to harbour insect pests.

Tomatos.—A sowing of Tomato seeds should be made in six-inch pots filled with a sandy compost, and the seedlings raised in a temperature of 55° to form a succession to the winter-fruiting crop. Pot the plants in sterilised soil when they are large enough for handling, and grow them as sturdily as possible.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Rhubarb.—A continuous supply of forced Rhubarb may be had by introducing more roots to gentle heat as required. Rhubarb plants intended for forcing should be lifted and exposed to the weather for some time before introducing them to a heated structure.

Seakale.—Roots intended for forcing should be stood in some convenient place so that the required quantity may be procured easily in bad weather. Retain the strongest thongs for planting next spring, cutting them into portions six inches or seven inches long. Make a clean, horizontal cut on the upper end and a slanting cut at the bottom part, so that it will be an easy matter to distinguish the "crown" end at planting time.

Spring Cabbage.—When the weather and ground permit of the operation being done, hoe the beds of spring Cabbage again. This will aerate the ground and prove beneficial to the crop. Draw soil up to the stems of the earlier plants; this will help to prevent the plants from being loosened in the soil by strong winds, as well as protect the stems from frosts.

Seed Boxes.—During bad weather all boxes that will be required for seed sowing or other purposes should be cleared of old soil and rubbish and stacked ready for use. Repair those that require mending, and replace with new ones any that are too bad for use again.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Buddleias.—These beautiful, autumn-flowering shrubs look equally well grown as wall plants or when grouped on lawns. All are free-growers and some make shoots from eight feet to ten

useful shrub for the wild garden. Its flowering period is July and August. To obtain the best flowering growths the plant requires to be cut back very hard, and this may be done now. The Canadian Elder thrives best when planted in a moist situation.

General Remarks.—The present is a suitable time for procuring Birchwood for the making of brooms. Take advantage of frosty weather to cart manure to borders and beds that may be widely separated from a roadway by lawns. Topiary specimens of Box should be given protection from snow, and Conifers should be relieved of snow after heavy snow-falls before the snow has time to harden and freeze to them.



FIG. 190.—BEGONIA PINK PERFECTION.

(see p. 464).

feet long in a single season. These shrubs are not particular as to soil. Hard pruning is necessary each year to produce good flowering growths, and this is best done in the spring. *B. magnifica* blooms during August and September, the violet-purple flowers being most attractive. The Chinese form of *B. varabilis* known as *Veitchiana*, is also well worth planting. The flowers are a pleasing mauve shade, the plant is a strong grower, and the foliage deep green with silvery reverse. Buddleias are easily propagated from cuttings made from shoots of a medium size. The present is a suitable time to select the cuttings; they should be prepared in the usual way by cutting below a node, then tied into bundles and heeled in the open ground until spring when they may be placed in rows along with other shrub cuttings on the border.

Sambucus canadensis.—This Canadian Elder with its large, white heads of flowers, is a most

French Beans in Pots.—A sowing of French Beans should be made now under glass. The plants will come into bearing in March, and at a time when there is a difficulty in maintaining a varied supply of vegetables. The seeds may be sown in nine-inch pots, which should be well-drained and filled to within two inches of the rim with soil of a light, open nature. Soil from an old Melon bed mixed with its bulk of leaf-mould is suitable. Germinate the seeds in a forcing house where bottom heat is available, but directly the seedlings appear above ground stand them in a warm house where they will receive all the light available. Water should be given the roots sparingly until the plants have developed a considerable amount of foliage. Frequent syringings with clear water, a few degrees warmer than the temperature of the house, are necessary. When the plants approach the bearing period, top-dress them lightly with rich loam mixed with a quick-acting, artificial manure.

INDOOR PLANTS.

WINTER-FLOWERING BEGONIAS AT AMPORT ST. MARY.

WERE the winter-flowering section of the Begonia family so easy of cultivation as the summer-flowering, tuberous-rooted section, many more of our conservatories and homes would be brightened by them during the dull days of winter. Unfortunately, the secret of successful culture has been but sparingly divulged, although Mr. Coutts (*Gard. Chron.*, December 5, p. 453) has shown the way. Fortunately, however, an increasing number of enthusiasts in gardens are paying earnest attention to this group of flowering plants, and among them Mr. A. S. Gooden occupies a high position. He is also fortunate in receiving encouragement from an equally ardent employer—Mrs. Sofer-Whitburn, and has produced, at Amport St. Mary, one of the finest displays I have seen. For size of plant, robustness of foliage, freedom of flowering and general effect, these Begonias are all one could wish. Nearly a score of the choicest varieties are grown, and of these the variety Optima is particularly fine, several plants having a circumference of seven feet to eight feet, and a height of two feet to three feet. This Begonia is a great favourite at Amport.

Another variety of outstanding merit is Pink Perfection (Fig. 190), six feet in circumference, with beautiful, rosette-like, pink flowers, its buds expanding like miniature and exquisite Rose buds. One plant of Eclipse, with distinct, salmon-cloured flowers, has a circumference of about five feet, while Elatior, nearly as large, has rosy-carmine flowers which are very effective in artificial light. Flambeau, a variety with brilliant orange-scarlet flowers, has strikingly handsome foliage; and one named Emita has large flowers of a coppery-orange shade, and a fine habit; it is rendered additionally attractive by reason of its golden stamens. Exquisite, with flowers three-and-a-half inches across, and noble foliage, is most attractive, while Orange King is very showy in its colouring of pink and orange-yellow.

One or two varieties seem to be somewhat later in flowering, notably Her Majesty, with beautiful orange flowers and stout leathery foliage; and Fascination, a pleasing salmon tint. Rose Queen, Dazzler, Beacon and Scarlet Beauty all deserve mention.

It may interest growers to note that Mr. Gooden's plants are grown in pots of nearly every size, from sixties to those eight inches in diameter. Many beautifully-flowered examples are grown in the smaller size, for instance, a plant of Pink Perfection in a sixty-sized pot, is fifteen inches high, nine inches across, and literally covered with its pretty, drooping sprays of exquisite flowers.

At the time of my visit to Amport, the bearer of a name that will live in its association with this modern race of Begonias—John Heal—had just passed away. How delighted he would have been to see such successful culture of these hybrids, of which he was the originator.

Amport can boast a clear atmosphere, which no doubt, is a helpful factor, while absolute cleanliness of the plants in all stages of growth is another. W. F. B.

ACALYPHA HISPIDA.

FOR some thirty years the genus *Acalypha* has been represented in plant stoves by species and hybrids grown for their ornamental foliage alone. The introduction of *A. hispida* from New Guinea by Messrs. Sanders, three decades ago, attracted considerable attention at the time, and it remains the only *Acalypha* grown for its decorative value as a flowering subject.

Acalypha hispida is a strong-growing plant; if given generous treatment it may be grown in pots to a height of from six feet to ten feet.

Cuttings of young shoots taken with a heel in early spring root quickly. The young plants should be grown in a warm, moist house. As growth proceeds, and the long, drooping, bright red tassels develop, syringing should be dis-

continued, or premature decay of the flowers will result. In a warm, airy greenhouse the inflorescences remain in good condition over a considerable period. Plants grown for a second year make fine standards, with a spreading head of several branches. Fred W. Jeffery.

ROSE GARDEN

A GARDEN OF REMEMBRANCE.

READING over a list of the best Roses grown sixty years ago, or more, is rather like spelling out the names of friends on their tombstones, so few are still left alive! And of those left us, it is interesting to note that we owe more, perhaps, to Mons. Noisette, the well-known raiser of Roses, at Versailles, than to later growers. He gave the "start" as we may say. How often the term "Noisette Roses" was used, and how often did folk think the term applied to the shape of the Rose bud, i.e., like a Nut or Noisette, rather than to the man who first hybridised the Indian Tea Rose! Of all his Roses there is but one that really remains in cultivation, and I trust it may be long before that charming and fragrant climbing Rose Lamarque is forgotten. Cloth of Gold, or Chromatella, is another of equal beauty but less free-flowering, at any rate, in England. Until the arrival of Maréchal Niel there was no Rose to compare with it, and that now seems to be wearing out, while its pendulous blooms render it of little use when cut. These are all strongly fragrant, and another Rose of that date, called Socrates, is the sweetest of all! I had thought this delightful Tea Rose was lost to cultivation, but thanks to the generosity of a garden friend, I am the possessor of a plant or two. It recalls to the nose what the taste of a fine Nectarine is to the palate, and its colour is that of an Apricot that has a sunburnt cheek before it is fully expanded.

Then come two Bourbon Roses of later date, one of which, Souvenir de la Malmaison, should never be forgotten for sea-side gardens, where its blooms expand so much better than inland. The second is a climber, Duchesse de Nemours, which is a first-rate autumn bloomer in the south of France but goes to leaf in more northern gardens. Yet another Bourbon is the precursor of bedding Roses, called Hermosa, or "Beautiful," but which figures in catalogues as Armosa, which means nothing. It is still in cultivation.

Does anyone grow or remember Smith's Yellow? I wonder. Its fine bold buds scarcely ever condescended to open, and yet it is the parent, I think, of that good old Rose, Devoniansis, so sadly forgotten, although its climbing sport is still seen in a few gardens, and so it deserves a place. Then comes, in later days the old Gloire de Dijon, which reigned supreme for many years till Maréchal Niel burst on our astounded eyes, and a yellow Rose was the height of fashion. Then came La France, the fragrant and lovely forerunner of Hybrid Teas, which also is becoming a memory, owing, no doubt, to its dislike of hard pruning. There is a fine old Tea Rose, Souvenir de Louis Van Houtte, that was at one time grown almost universally but drooped its beautiful head very sadly as well as its petals before they were faded. This reminds me that in the south of France Lady Plymouth, a Rose of modern days, is of such excellence in that climate that both Louis Van Houtte and the Maréchal Niel seem blended in it, but it has a firm, stiff peduncle and good growth. It is a Rose that does not show to advantage in England, but there are many growers in sunny lands who will welcome its beauty, freedom and robust growth.

With the arrival of the Hybrid Tea Rose and the wonderful Pernetiana hybrids there are Roses for all climates and situations; still, my plea will be for a garden where some of the best old Roses may be grown, and where I may test the vigour and endurance of these intercrossed seedlings, which, though beautiful, may not prove lasting, and in many cases have lost the charm of fragrance. Edward H. Woodall.

HARDY FLOWER BORDER.

PENTSTEMON HETEROPHYLLUS.

ALTHOUGH we always winter a few cuttings of this beautiful *Pentstemon* in a cold frame, the plant is surprisingly hardy. Throughout the recent severe weather, when many subjects usually considered much hardier suffered badly, *P. heterophyllus* did not show the slightest injury, though quite unprotected. The soil in which the plants are grown is well-drained and gritty, such as this species enjoys, but even so, one would have thought that less than 20° of frost (our maximum for November) would have been sufficiently severe to destroy the whole bed.

P. heterophyllus is a species of such outstanding merit that the above facts are very encouraging. The slender, erect growths, narrow leafage and spikes, often over a foot long, of drooping, tubular flowers of a glistening clear blue, "shot" with subtle shades of amethyst, are extremely lovely, and a succession of bloom is maintained from July to autumn. The only thing that ever troubles our plants is a mysterious "die-back," specimens in full flower suddenly withering without any apparent cause. This, one can only suggest is caused by some fungous disease, and *P. heterophyllus* is not the only member of the genus affected by it. J. N., Wales.

ALPINE GARDEN.

SPIRAEA PECTINATA.

SOMETIMES listed as *Eriogynia pectinata*, the subject of this note is a useful plant for a cool side in the rock garden or for carpeting the soil in which woodland bulbs or dwarf Rhododendrons and others of the more lowly peat plants are established. In such conditions, the soil being cool and moist, *S. pectinata* will soon make a broad, loose mat, an inch or so in depth, of finely-cut, pale-green foliage.

The plant spreads by means of surface runners which root as they go, but these are easily kept within bounds where necessary, and we have never found the plant to prove a nuisance. During the later summer, fluffy white inflorescences appear all over this green carpet, and even in almost entirely sunless spots the plant will blossom with commendable freedom. Being a native of America, *S. pectinata* is quite hardy. A. T. J.

THE SNOWDROP ANEMONE.

ANEMONE SYLVESTRIS, the Snowdrop Anemone, is a native of woods of some parts of the continent, and it thrives best in a cool spot. The only place where I have seen it do well in sun and apparently in dry soil was in a garden where the subsoil was rather moist. The somewhat nodding flowers are generally pure white and produced on stems of varying height, usually nine-inches to twelve-inches tall. A colony of the plant in a semi-shaded place is exquisite indeed. Loam and leaf-mould provide the best rooting medium, but the latter may be omitted if not readily procurable. This Anemone should be planted in late autumn or spring, but pot specimens may be planted out at any season.

The ordinary form of *A. sylvestris* is lovely but there is a larger form called *grandiflora*, while a double one, which caused some stir on its first introduction and exhibition in London, is also in cultivation, although less graceful than the single type. The new variety, *A. s. Spring Charm*, is a pleasing form with large, white, bell-shaped flowers. Perhaps the latest addition to the varieties is *A. s. Merton Hybrid*, which is said to have flowers of a pretty, soft cerise-pink. *Anemone sylvestris* is perfectly hardy, and when naturalised and left alone will soon make a good display. S. Arnott.

THE PRUNE INDUSTRY IN CALIFORNIA.

FOLLOWING the very interesting account of the Prune industry in Bosnia by Mr. Mario T. dell' Elmo in *Gard. Chron.*, October 17 and

inches high, but their success depends on the rainfall. The trees at this time are in full blossom and a great percentage of the growers place bees in their orchards to pollenate the flowers. In my orchard, I have four acres of French Prunes and four acres of Imperial Prunes; with me, French Prunes do well

planting them. After they are established, they are cut back to a bud where the uppermost branch for forming the head is desired. Two-and-a-half feet is about the height preferred for cutting back the young trees.

The orchards are often cultivated to conserve the moisture, as there is not enough rain for the trees' requirements after the month of April or early May. We very seldom get rain after May and before the end of September. Sometimes the rain does not fall before November. Hot weather is really a boon to the cultivator who knows how to turn it to advantage, because, given a soil well-stored with food, sunshine and water are the determining factors in securing maximum yields. Deep cultivation and intelligent manuring will produce good results in the hottest of summers; but with copious and intelligent waterings still better results may be obtained.

Artificial supports are often necessary to prevent the breaking of fruit-laden branches; slender rods from one inch to three inches in diameter are mostly used for this purpose, and are placed under the branches so soon as the latter commence to bend with their burden of fruits. Wires to fasten opposite branches together are used in a number of orchards, the most common practice being to fasten a small wire to the inside of a large branch with a screw-eye or staple and connect to a branch on the opposite side of the tree.

Generally, the fruits are allowed to remain on the trees until they are thoroughly ripe and falling, then they are gathered by hand from the ground, placed in large boxes for hauling to the drying yard, where they are dipped in hot lye water. After this process they are laid out on wooden trays to dry for about five or six days in the hot Californian sunshine. When dry enough they are packed in bins in the store house, where they are allowed to remain for two weeks, when they are ready to ship to market.

Prunes in the fresh state, as compared with ordinary Plums, usually possess a firm flesh, high sugar content, and frequently a high acid content; they are liable to be astringent until they are very ripe. Plums are sometimes dried after the stones are removed, but such fruits are not known as Prunes, but as dried Plums.



FIG. 191.—HOW THE WATER IS CONVEYED TO THE PRUNE ORCHARD.

October 24, 1925, the particulars of the Prune industry in California, furnished by my brother, Mr. Charles E. Paice, as given below, may be of interest to readers of *The Gardeners' Chronicle*. James Paice, Sunnyfields Lodge Gardens, Mill Hill :—

"THE area utilised for the culture of Prunes in California is very much limited when compared with the gross area of this State, as orchards are restricted to tillable lands which are under irrigation, or to districts where the winter rainfall is sufficient for the need of the trees. The principal commercial producing area of this fruit is the Santa Clara Valley (central California). There are about 15,000,000 Prune trees under cultivation in California, of which the writer has about 2,000; a small fruit farm compared with most others in the valley.

One-year-old trees of average size are considered most suitable for orchard planting. The trees are planted sufficiently late in the winter to ensure that new growth is not formed until the following spring, or they may be planted in the spring while the soil is still moist and cool, also before the time for wood growth to start. As the usual rainfall at the Prune-growing centres of this State is confined to the fall and winter seasons, occurring mostly while the trees are dormant, and the summers being hot and dry, the moisture content of the soil depends very much upon cultivation, if irrigation is not practised under these conditions. The photographs (Figs. 191, 192) show the method of irrigation employed. It is the custom to plough to a moderate depth as early in the spring as possible when the soil becomes sufficiently dry to work well, following the plough with the harrow to smooth and loosen the surface. Too much care cannot be given to the choice of time for the spring cultivation.

Most growers plant or sow seeds for a cover crop after the first rain, such as Canadian Field Peas, Clover, or seeds of any similar crops suitable for the soil. By the time the ploughing season arrives (March) these cover crops are usually from eighteen inches to twenty-four

without bees, but Imperial is a failure without them.

Pruning is done during December and January, and grafting in the month of February—each

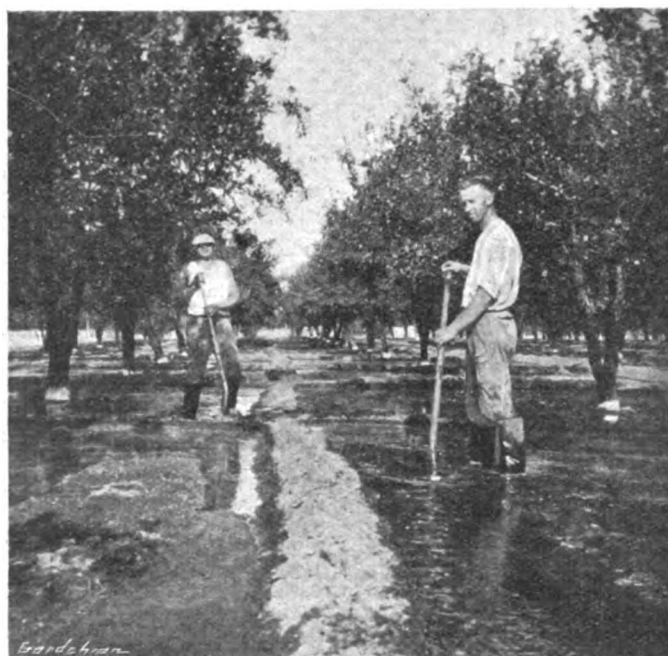


FIG. 192. A CALIFORNIAN PRUNE ORCHARD FLOODED WITH WATER.

year practically every grower grafts a certain number of trees. Early and careful planting are important details in the culture of young Prune trees, February being the month for

At the time of writing (July 29, 1925), the trees are heavily laden with Prunes—so we are assured of a good harvest this year. Charles J. Paice, California."

EDITORIAL NOTICES.

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Urgent Communications.—If sent by telegraph, these should be addressed "Gard. Chron.," Rand; or by telephone, to Gerrard, 1543.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent us early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

NOTES ON CONIFERS.

No. XXII.—ABIES LASIOCARPA.*

THIS alpine Fir, from the Rocky Mountains, has generally been regarded as a "bad doer" in this country, a reputation borne out by the stunted and unhealthy specimens one occasionally meets with in Conifer collections.

It was a pleasure, therefore, to see a thriving tree among other Conifers in the Earl of Carnarvon's beautiful park at Highclere recently, where it was planted about thirty years ago by the late forester, Mr. Storie. The tree, when I saw it, was bearing a number of cones on the topmost branches, and a photograph of two of these, kindly sent me by the present forester, Mr. F. J. Soper, is reproduced in Fig. 193. I do not remember ever having seen this species bearing cones before in England, which makes the Highclere tree particularly interesting.

There is usually no difficulty in distinguishing *Abies lasiocarpa*. It may usually be recognised at once by the peculiar arrangement of the foliage as well as by the resinous buds, hairy shoots, and ashy-grey foliage. The leaves, which generally have a glaucous tint owing to the presence of stomatic lines on both surfaces, are irregularly pectinate or curved upwards from the branches. The leaves of the terminal shoot are pointed. The cones are from two to four inches long, and dark purple when mature.

This species is found wild on the Rocky Mountains and the higher ranges of the west coast of North America, from Alaska to Arizona and New Mexico, attaining an altitude of 10,000 feet in Colorado. It was first found in 1832 by Douglas, whose specimen is still preserved at Kew. It was originally described as *Pinus lasiocarpa* by Hooker. The tree often found in gardens as *Abies lasiocarpa* is really *A. Lowiana*, from Oregon and California, which, introduced by Lobb in 1851, was subsequently distributed by the Messrs. Veitch, of Exeter, under the name of *Picea lasiocarpa*.

* *Abies lasiocarpa*, Nuttall, *Sylva*, III. 138 (1849); Masters, *Gard. Chron.*, V. p. 172, Figs. 23, 27, 32 (1889); Sargent, *Silva N. Amer.* XII. 113 t. 611. (1898); Elwes and Henry, *Trees of Great Britain*, IV. 800 (1909); Dallimore and Jackson, *Handbook of Coniferae*, 107 (1923); *Abies subalpina*, Engelmann, *Am. Nat.* X. 555 (1876); *Pinus lasiocarpa*, W. J. Hooker, *Fl. Bot. Am.* II. 163 (1839); *Picea lasiocarpa*, Murray, *Gard. Chron.* IV. 135 (1875).

When I pointed this out to a friend in whose garden stands an unusually fine tree of *Abies Lowiana*, he made no comment at the time, but subsequently I received from him by post the following lines:—

"The pride of Patshull's grounds, erect and tall,

As '*lasiocarpa*' you surpassed them all;
Alas! we find through Kew you fall from fame,

As '*Lowiana*,' a far meaner name."

Sudworth points out that the long, narrowly conical crown terminating in a conspicuous spear-like point, recognisable at a long distance, at once distinguishes this Fir from all associated species in the region where it is found wild.*

So far as we know, there are no large trees of *Abies lasiocarpa* in cultivation. It is very difficult to state when it was first introduced, but probably about fifty years ago.

The var. *arizonica*, Lemmon, occurs in the San Francisco mountains and is distinguished by its creamy-white, thick, corky bark and different foliage, somewhat like *A. amabilis* in arrangement. The leaves are more closely pressed to the branchlet above, pectinate on the lower side of the shoot and notched at the apex. This variety has also been introduced into cultivation during the last twenty years, but like the typical form it shows at present no sign of becoming of any value as an ornamental tree in this country. It may be a distinct species. A. Bruce Jackson, A.L.S.

ROADSIDE TREES.

THE consideration as to the suitability of a street for planting is of the utmost importance, and the official concerned must needs have regard to the width of the footway, the presence of telegraph wires, and the distance from the kerb to the line of adjoining houses. An important factor, also, is that of overhanging trees and, where such occur, no planting should be attempted. The ideal road is one of sufficient width to allow the planting of a row of trees through its centre, dividing the traffic, and giving each tree ample space for development. Such a road, unfortunately, is rare in this country. Roads less than thirty feet wide and pavements less than eight feet in width are not fit for planting, and, in the case of the width mentioned, only trees of small-growing types should be used.

The distance for planting varies according to the kind of trees to be used. Strong growing trees, such as Plane, Elm, etc., should be fully sixty feet apart and small growers thirty to forty feet apart. It is good policy to give ample space, as this is not only advantageous in admitting light to the houses, but has considerable bearing, where large plantings are to be undertaken, on the number planted, thus lessening the work of maintenance.

In marking positions endeavour to bring them opposite the doorways rather than the windows of the houses, and be careful to avoid water-pipes, etc. The width of the footway is the determining factor as regards the size of the hole for planting, and, unless it is very wide, no more than two feet square can be obtained. Having decided the positions the holes should be excavated and, before refilling with fresh soil, the stake for the support of the tree should be placed in position and securely forced into the ground. A suitable stake for this work is one of the Sweet Chestnut, above eleven feet in length and two to three inches in diameter at the apex. Stakes of this Chestnut have lasting qualities, are neat and of natural appearance. Determine the position of each stake by using the kerb-line as a guide. The actual work of planting should be carried out expeditiously, as facilities are not always available for the effective covering of the trees, and drying out may result. A thorough watering is beneficial after planting. Failing properly made guards

for the prevention of damage by horses a good substitute is half-inch or one-inch mesh wire-netting, which may either be fastened to the stake or placed around the tree and wired securely.

The pruning of street trees is a subject on which it will be found conflicting opinions are held by residents of the area in which the work is in progress. It is essential that systematic pruning be adopted from the first year of planting and that the trees be not allowed to grow at will before attention is given them. The chief points regarding this work are the checking of overcrowding by the removal of superfluous branches, the careful choice of those to form the base, and the removal of shoots likely to come in competition with the leader. The object of the pruner should be to give each tree an opportunity of becoming a well-balanced and shapely specimen.

The work of lopping and pruning large trees in public places is of a dangerous nature and calls for much care and attention. The necessity for much deplorable cutting is, invariably, the result of placing large-growing trees in narrow thoroughfares, which makes lopping the only remedy short of removal. Good work, however, may often be done by carefully cutting to small branches, and if an eye be kept to the general outline, the shortening of these by the pruner gives a fair result.

Of the many evils attending street trees the escape of gas is most fatal. A sudden and large breakage results in the foliage falling in a short time; smaller breakages, with gas gradually percolating through the soil, can be determined by the yellowing of the leaves, short-jointed growth and, in the Plane tree, the formation of unusual quantities of fruits. When lifted, the roots of affected trees are of a bluish colour and partly decomposed. The wood, too, is usually discoloured.

The fastigate types are the most favourable for street planting, in fact, nearly all trees of erect habit are very suitable for the purpose, as their branching system is not too spreading, and the tendency to ascend is a distinct advantage.

Excellent lists containing names of trees adapted for road planting have been prepared by good writers and noted by those responsible for inclusion in trial and planting schemes. Failing a well-stocked municipal nursery, the whole arrangement is often upset by the inability of the nurserymen to supply trees of sufficient height and size. A case in point occurred quite recently, and concerned the inclusion of *Prunus cerasifera* var. *atropurpurea*, which nurserymen were asked to supply on eight-foot stocks, and the only offer made, viz., six-foot, was too small. Further, the grafting of *Robinia inermis*, &c., could be carried out satisfactorily at eight feet, which is more favourable for street planting than the present method of heading down to six feet.

The following list and remarks of trees thriving on the roadsides in this area (South-east London) may be of interest: *Acer dasycarpum*. This silver Maple grows vigorously and is highly ornamental, the foliage becoming attractively coloured in the autumn. The wood, however, has a tendency to be brittle, and the tree is, therefore, apt to be damaged by high winds in exposed places.

A. Negundo variegata thrives well locally and is included for planting in new roads. It is an admirable subject where only a small space is available.

A. platanoides and its purple-leaved variety do well.

A. platanoides var. *Schwedleri* is very effective in spring, when the young foliage is of a reddish-brown colour. It is a rather slow grower in this district.

Aesculus Hippocastanum, the Horse Chestnut is well established in several old roads here, with the result that the trees have outgrown the space available, and lopping has been necessary. This treatment is regrettable, as not only does it ruin the beauty and outline of the tree, but its tendency to die back after cutting proves its undoing, for it invariably becomes attacked by fungus. In addition, it is not prized as a good street tree for the reason that

* "Spruce and Balsam Fir Trees of the Rocky Mountain Region." *Bull. No. 327*, U.S.A. Dept. of Agric., 25, 1916.

after its early luxuriance, the foliage soon discolours and it is a poor drought resister. A number of the small, red-flowering varieties do fairly well.

Ailanthus glandulosa has proved to be an excellent town tree. It needs ample space for development, is slow to commence growth, but when established is an attractive subject. The coloured, winged fruits add considerably to its late summer appearance.

Betula alba, the common Birch, is light and graceful in appearance, and admirably adapted for planting in suburban areas. It thrives well here, giving a much appreciated change from other larger-leaved trees. If given proper attention during the early period of growth, very little cutting will be required

but as a street tree, especially in suburban areas, it is too vigorous, and, failing adequate accommodation, severe and constant pruning is necessary. As an example of its rapid growth in this district, shoots eight feet in length are quite common after pruning the tree the previous winter. It has been definitely banned here, and no planting has taken place for several years. With regard to the supposed injurious effects of the fruit, I have had considerable experience of pruning this tree at all seasons of the year, and have never discovered the slightest discomfort when engaged in dealing with fruit-laden trees. The real cause of complaint is the thick coat of fine woolly hairs covering the whole leaf, which becomes easily detached, and may be removed in small masses

feeling is that of a heavy cold or hay fever. This unpleasant condition is felt for several hours after the work has ceased.

I have been informed that where numbers of young Planes are grown in nurseries, on the continent, the evil effects on the men engaged amongst them has been recognised and protection given by the provision of a suitable mask.

Pyrus Aria, the White Beam, is a good grower, requiring attention in the matter of thinning and pruning. A road planted with this tree is strikingly effective during the spring and early summer.

Quercus Cerris, the Turkey Oak, is a very satisfactory tree here. Contrary to the general objection of the genus to severe cutting, this

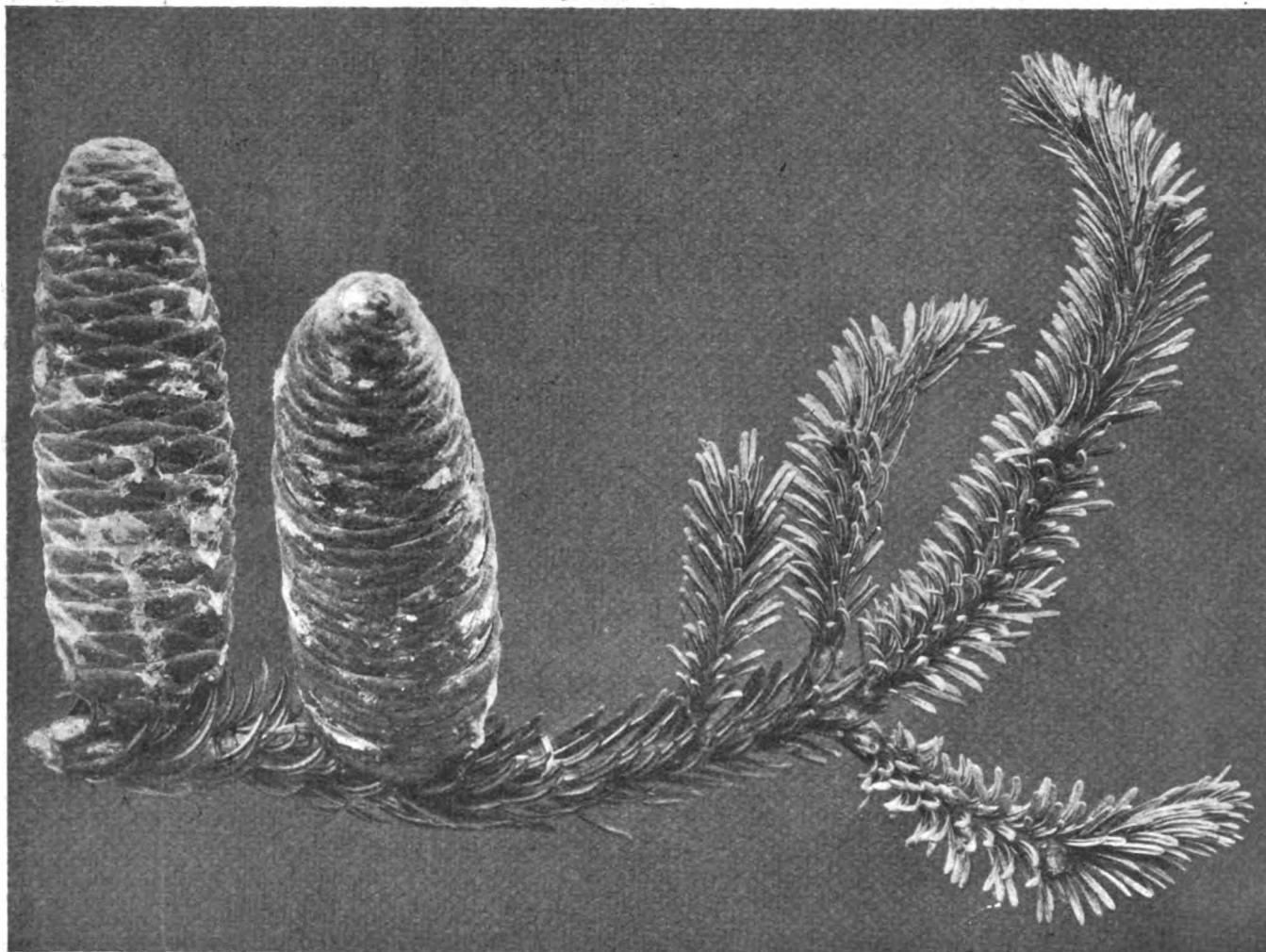


FIG. 193.—CONES AND BRANCH OF ABIES LASIOCARPA.

(see p. 466.)

as it develops, this tree being particularly adverse to pruning.

Fine specimens of the common Beech (*Fagus sylvatica*) may be seen in the Sydenham district. The purple-leaved variety is a useful and serviceable tree for street work in outlying areas. A pleasing combination I have in mind is a road planted with alternate trees of this variety and the Lime.

Fraxinus pennsylvanica aucubaefolia, the golden-variegated Ash, makes a change for planting purposes; it is a tree of slow growth, and is, therefore, adapted for use in narrow thoroughfares.

Much has been written regarding *Platanus acerifolia*, the London Plane, for planting in London, the continuous and monotonous use of which has, unfortunately, prevented the planting of other deserving subjects. That it grows well and gives satisfaction cannot be denied,

by the fingers. An interesting and instructive trial may be made by lightly drawing a leaf across a piece of dark-coloured cloth. From very close observation of this tree I am convinced that the air is laden with these minute hairs on every occasion a stiff breeze is blowing during the period of growth. This is not noticeable in the open, but, residing as I do, in a road where there are Planes, and viewing these from the rear of the house through the fanlight against a background of red bricks, with the sun striking through the foliage, I witness a constant release of the small masses, in such numbers that they resemble a fall of fine snow.

Working on these trees when they are in foliage is a torture; the victim so engaged experiences acute irritation to the throat, nose and eyes; in addition, sneezing continues throughout the whole operation, and the general

species bears pruning particularly well and appears to show no ill-effects.

The greatest fault of *Robinia Pseudacacia*, var. *inermis*, the Mop-headed Acacia, is the brittle nature of its branches, and, as this variety is grafted, the point of union is often weak, resulting in the head being blown out. The rich green foliage retains its pleasing freshness during the whole season, and is rarely affected during long dry periods. An interesting development of recent years is the fondness of the mealy-bug for this tree, the bark of many of our specimens being coated and whitened by their presence. The variety *Bessoniana* is of medium growth and is useful for street planting. With regard to *Robinia* generally, for town planting and particularly in congested and dirt-laden areas, they do not enjoy a long span of life and, after a given period, necessitate watchfulness, as they become a possible source

of danger. The rough, rugged bark is a ready receptacle for dust and dirt and often harbours disease.

Tilia vulgaris, the common Lime, is a popular tree for planting schemes. It is very beautiful in early spring when the young, pale green foliage makes its first appearance, but this soon passes and, at the first dry period, the leaves become brown, dropping early, and littering the footways for the remaining season.

Tilia euchlora (daaystyla) is preferable to the foregoing in that its foliage is cleaner and not so subject to the attacks of insects.

Tilia tomentosa (syn. *argentea*), the White Lime, is a good grower and good drought resister, but requires ample space for development.

Elms are represented in this district by several well-developed trees. *Ulmus stricta* (syn. *cornubiensis*) and *U. stricta* var. *Wheatleyi*, after fourteen years' planting, are thriving satisfactorily and producing clean and shapely specimens. *H. G. King, Camberwell.*

TREES AND SHRUBS.

DANAË LAURUS (SYN. RUSCUS RACEMOSUS.)

This plant, which is allied to the well-known Butcher's Broom, *Ruscus aculeatus*, is not planted to the extent that its merits deserve. It is most useful as a background in borders where an elegant evergreen of medium height is desired. It will thrive on a shady border.

The soil best suited to its needs is a light sandy loam. Excellent specimens have been grown in a peaty soil but the plant is impatient of drought, and is somewhat difficult to establish on very heavy clays. This evergreen species is most serviceable for supplying cut foliage. The elegant shoots, which may be cut about three feet in length, are much appreciated for decorations, especially during the winter.

The young growths are produced from the base of the plant, and remain green for two years. Owing to this, it is advisable to cut the shoots which have completed a season's growth, leaving the more tender one for succession. By adopting this method the plant remains vigorous, and shapely specimens are produced, which are very attractive at all seasons of the year. The common name of *Dana Laurus* is *Alexandrian Laurel*. *C. Ruse.*

ERICA VAGANS.

The Cornish Heath, *Erica vagans*, must be considered one of the most valuable of the hardy Heaths, for it will continue to flower profusely after all others—save, perhaps, *E. stricta*—are over, which means that a plantation will give good masses of colour far into the autumn. We always rely upon *E. vagans* continuing to flower until *E. darleyensis*, the first of the winter-flowering Heaths, begins to bloom.

In habit, the Cornish Heath is, as most people are aware, somewhat distinct, for the stems, two feet to three feet in length, are comparatively slender and lissom, giving the shrub a graceful, light, spreading, often semi-prostrate appearance. A well-grown specimen may cover a diameter nearly twice the length of its height. Even so, this Heath is shapely and compact enough to make an excellent edging of a bold description.

There are many good varieties of the Cornish Heath, and selected forms of the typical plant, with flowers of a soft rose-pink, are by no means to be overlooked. The variety *grandiflora* has immense spikes of a full-toned pink, and another handsome sort is *rubra*, the flowers of which tend rather to crimson. The above, however, have been quite eclipsed by the splendid variety *St. Keverne*. The flower-spikes of this excellent Heath are often six inches or seven inches long, proportionately wide, and of a rich, bright rose, free from any taint of purple. The newer variety, *Mrs. H. D. Maxwell*, is of the same generous quality and it might have been a serious rival of *St. Keverne*, had not its blossoms been distinctly more *corise* in tone. As the raisers of this

fine Heath (Messrs. Maxwell and Beale) state, the blooms are in colour much like those of *Potentilla nepalensis*, var. *Miss Willmott*.

Until quite recently there was not a satisfactory white form of *E. vagans*, but the new variety, *Lyonesse*, is a remarkably good one, the corolla being a dead white and the anthers brown. *Lyonesse* is as striking a novelty as either of the two last-mentioned. *A. T. J.*

MESEMBRYANTHEMUM.

(Continued from page 404.)

19a.—C. Batesii, N. E. Br.—Growths varying from 4 lines high and 1½–3 lines in diameter at the circular top, to 6–8 lines high, 3–6½ lines broad and 2½–5½ lines thick, obconic, varying from nearly circular to elliptic in outline at the top, which is regularly convex and not at all depressed at the centre (type C); orifice gaping, ¾–1½ line long, and rather conspicuous in hot sunshine from its pallid or somewhat whitish appearance, its lips rising to the summit of the top; surface smooth, glabrous, grey-green, rather faintly marked with a few lines of dots and very few separate scattered dots of darker green; in the larger and more perfectly marked growths there are usually 3–5 radiating lines of dots on each side of the orifice, and a few scattered dots or short lines in the region at each end of the orifice. Calyx 4-lobed, reddish; tube 2½ lines long, partly exserted; lobes ¾–1 line long. Corolla 5–6 lines in diameter, expanding at night; tube 3–3½ lines long, whitish; petals, 25–30, lax, about 3 lines long, and ½-line broad, linear-filiform, pale creamy-yellowish. Stamens about twenty, in about three series at the mouth of the corolla-tube and exserted; anthers yellowish. Style about ¾ line long; stigmas 3–4, about ¾ line long, filiform, attaining to about the middle of the corolla-tube, far below the anthers, pallid. Top of the ovary shortly and broadly conical. South Africa; locality and collector unknown. Described from a living plant in the collection of Mr. J. T. Bates, of Hounslow, after whom I have much pleasure in naming it, and who obtained it from Mr. E. Taylor, of Southborough, Kent, without information as to origin.

7a.—C. breve, N. E. Br.—Growths as first developed after importation, 3–4 lines high and 3–4 lines in diameter, obconic, flattish or flattish-convex and circular in outline at the top (type E); orifice 1–1½ line long, scarcely depressed, glabrous, smooth, pale glaucous-green, with a few indistinct dots of a darker tint scattered over the top. Calyx partly exserted, 5–6-lobed, reddish; tube rather short and stout, 1 line long, and ¾ line broad; lobes ¾–1 line long, oblong or ovate, obtuse. Corolla (only a dried flower seen) apparently about 4–5 lines in diameter; tube moderately stout, 1½ line long, not exceeding the calyx; petals not very numerous, apparently in one series, 1½ line long, linear, clear yellow. Stamens about twenty, all exserted arising at the middle of the corolla-tube, about 1 line long; anthers light yellow. Glands united into a pale honey-coloured ring. Style none; stigmas 4–5, erect, ½ line long, filiform, apparently yellowish. Top of the ovary very prominent and convexly conical. Little Namaqualand; near Steinkopf, Meyer, Marloth 6,513!

This species is allied to *C. minutiflorum* and *C. Pageae*, but the indistinctly dotted growths, the stout calyx-tube, the stamens all being exserted and the more prominent top of the ovary well distinguish it.

6.—C. calculus, N. E. Br., in *Gard. Chron.*, 1922, vol. lxxi, p. 231. To this add reference—*M. calculus*, Schwantes in *Monatsschr. f. Kakt.*, Sept., 1920, p. 131.

22a.—C. cibdelum, N. E. Br.—Growths 6–9 lines high (probably much shorter and smaller under natural conditions), 3–5 lines broad, and 3–4½ lines thick, obconic, broadly elliptic or circular in outline at the top, in side

view the top is convex with a rather narrow and somewhat cut-like notch at the orifice (type E), and in end view the top is very obtusely ridged; orifice 1–1½ line long, with a much impressed dimple at each end of it; surface smooth, glabrous, green, perhaps grey-green under continuous sunshine, plentifully sprinkled with separate small dots of a darker green, which are not arranged in any pattern, and the orifice outlined with similar separate or connected dots. Flowers not seen. South Africa; locality and collector unknown.

Although I have had this plant in cultivation for nine years it has never flowered during that period. Viewed from above it somewhat resembles *C. truncatellum* on a small scale, but differs from that species by its growths being constantly of only about half the diameter of those of that species, of a more grass-green colour, and the orifice is not depressed as it is in *C. truncatellum*.

15a.—C. dispar, N. E. Br.—Growths very variable in size, 2–7 lines long and 2–6 lines in diameter, obconic, usually nearly circular in outline and somewhat flattened and obscurely ridged on the top (type F.), with the orifice 1–2 lines long, depressed in a slight notch, with a dimple at each end of it; surface smooth, glabrous, purplish on the sides under continued sunshine, and the top green, marked with numerous separate dots of darker green irregularly scattered over it, and with or without some of them arranged in or more or less connected into a line forming an irregular ring or broad figure-of-eight marking around and distant from the orifice, and the orifice itself outlined with similar connected dots. Calyx 5–6-lobed; tube partly exserted, 1½ line long, whitish; lobes 1 line long, oblong, obtuse, reddish. Corolla about 6–7 lines in diameter, expanding in the evening; tube 2 lines long; petals twenty or more, in 1–2 series, about 3 lines long, ½ line broad, slenderly linear, acute, whitish. Stamens about as many as the petals, in about two series, arising at or above the middle of the corolla-tube; anthers all exserted, pale yellow. Style scarcely ½ line long; stigmas 4, about 1 line long, pale-greenish, attaining to about the middle of corolla-tube. South Africa; locality and collector unknown.

Described from a living plant sent to me several years ago by Mr. E. Taylor, of Southborough, Kent.

38a.—C. octypum, N. E. Br.—Growths as first developed after importation, 3–5 lines high, 2½–3½ lines broad, and 2½–3 lines thick, obovoid, rounded or faintly notched at the top (intermediate in type between C and E), circular or broadly elliptic in outline viewed from above, with a slightly depressed and gaping orifice ½–¾ line long; surface glabrous, green, with the orifice outlined with a slightly raised smooth line, and from or about which radiate over the top and partly down the sides several other slightly raised smooth lines or irregular markings, and occasionally a dot in between them, all of which are of a darker green than the rest of the surface or perhaps under continuous sunshine become purplish if the surface in between these markings when viewed with a lens is seen to be rather conspicuously covered with minute white specks (stomata). Calyx much exserted (only a dried flower seen), 4-lobed; tube 1½ line long, membranous, whitish; lobes ¾ line long, reddish. Corolla apparently about 5–6 lines in diameter; tube much exserted from the calyx, 3 lines long, yellowish; petals apparently not very numerous, 2½–3 lines long, linear, magenta. Stamens in three distinct series of about eight in each series, one at about the level of the calyx-lobes, one at the mouth of the corolla tube and the third series midway between these two; anthers yellow. Style 1½ line long, attaining to the level of the lower stamens, with four minute filiform stigmas at its summit. Little Namaqualand; near Steinkopf, Meyer! Marloth, 6,365b!

Described from a living plant kindly sent to me by Dr. R. Marloth. *N. E. Brown.*

(To be continued.)

INFLUENCE OF ELECTRIC LIGHT ON PLANT GROWTH.

WHEN electric lamps emerged from the chrysalis stage and took their place as articles of practical use, a new turn was given to the study of the effect of artificial light on vegetation.

The subject has exercised the attention of investigators for a century-and-a-half, and though of necessity largely empirical, a mass of interesting information has been published about it at one time and another. In early days the expense and the practical difficulties of obtaining a considerable volume of artificial light were almost insuperable, and so, in the main, the experiments were conducted with lamps of comparatively low intensity.

With the introduction of the high power

Borlase Matthews of some experiments he has carried out at his farm at East Grinstead in hastening the growth of certain plants. For the purpose of the experiment, Mr. Matthews employed gas-filled lamps of 1,000 watt rating, suspended in reflectors from the roof of a glass-house. The reflectors, clearly shown in the illustrations (Figs. 194, 195)—reproduced by the courtesy of the Editor of the *Electrical Review*—were two feet in diameter, and hung at a distance of a yard from the pot plants on which the trial was made. "The tests were carried out on the ordinary plants which are usually to be found in greenhouses associated with a garden of fair size. In every case the progress of the plants was most remarkable. Daffodils and Lent Lilies which were placed under the light for six hours a night, flowered in four days, growing about three-quarters-of-an-inch a day. Narcissi flowered in seven days. In each case,

other times when the public are prepared to pay extraordinarily high prices for them.

In casting round to ascertain whether there might not possibly be some commercial advantages in electric lighting for market gardeners, other than for a special seasonal trade, the discovery was made by the writer that if the plants in greenhouses are given, in turn, one night's treatment, they make remarkable progress. In point of fact this progress is very much greater than the average per day if the plant were illuminated for a number of days. As one night's treatment improves the plants so much, it is well worth the while of an enterprising market gardener to treat all his plants in turn in this way. The practical method of carrying this out would be to suspend the lamps from an overhead runway with galvanised wire, so that each lamp can easily be moved into a fresh position for each night's

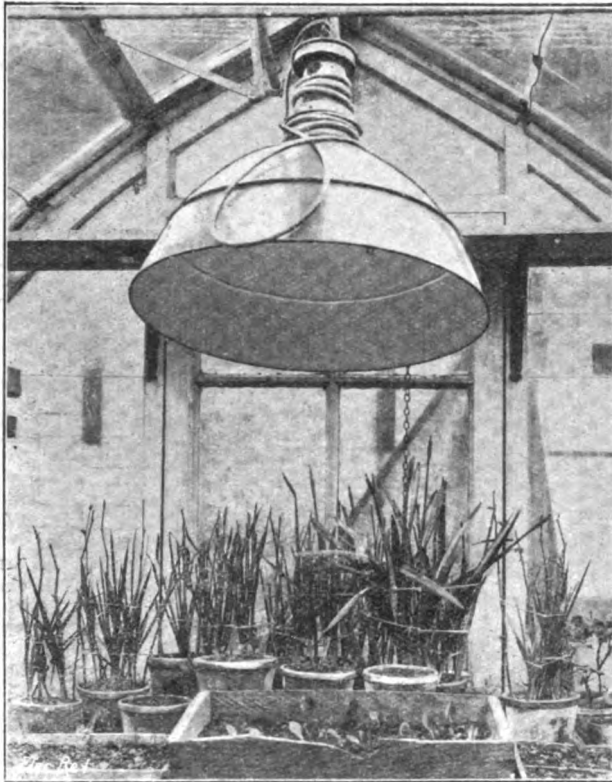


FIG. 194.—REFLECTOR USED FOR ILLUMINATING PLANTS.

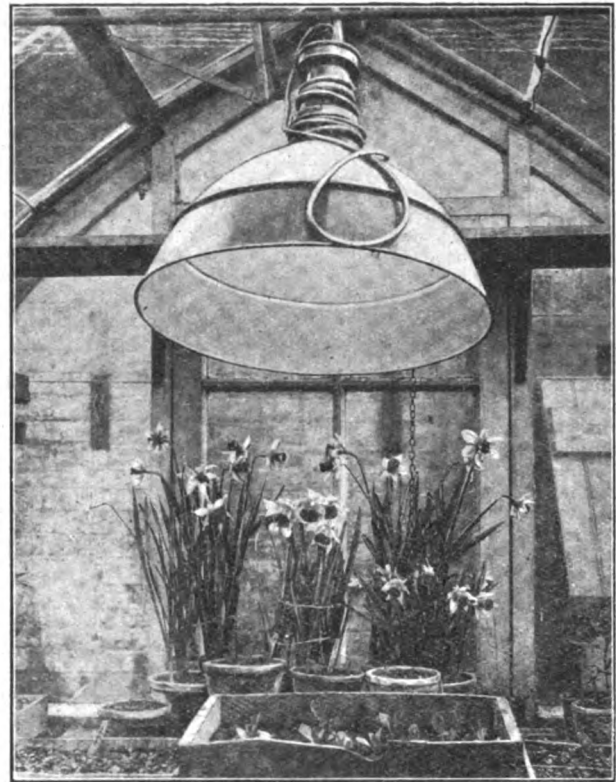


FIG. 195.—FOUR DAYS LATER: THE EFFECT OF ARTIFICIAL ILLUMINATION.

electric lamp in gas-filled bulbs the whole aspect of the matter has changed, not only from the scientific point of view, but from that of the commercial grower who already owes so much to science. Sometimes driven almost to despair by the comparative lack of sunshine in this country, and above all by the instability of such sunshine as falls to their lot, growers of fruits, flowers and vegetables can hardly fail to be interested in the practical application of a plan which may help to make them independent of the sun. We have not reached that stage yet: indeed, may never reach it, for while sunshine costs nothing, artificial sunshine must always cost something. Probably no grower can assess the cost of a prolonged lack of sunshine, such, for instance, as we had in the south in the summer and autumn of 1924; but it must be considerable, and if a substitute were available when wanted, at a reasonable cost, growers might find it advantageous to adopt it.

Eventually the matter must be settled by the purse, but meanwhile the use of electric lamps for bringing plants to maturity has gone beyond the laboratory stage. That much is evident from an interesting account* by Mr.

the plants were placed under the light when the buds were just beginning to form. The control plants placed away from the light took four weeks to flower. These experiments were carried out in rather an empirical manner, as the chief object was to obtain a general idea as to the value or otherwise of intensive illumination. From a scientific point of view they were entirely satisfactory, but the work would have been costly from the point of view of electricity consumption, if it had not been for the fact that the electricity supply on the writer's farm is generated by water power. By means of a self-winding automatic time-switch, the lamps were switched on at midnight and off at 6 p.m., i.e., the current was used for lighting the plants when not required for any other purpose. Further, the use of the time-switch made certain as to the exact period during which the light was on.

Since to obtain this very intensive illumination the lamps have to be placed so close to the plants, the number of plants that can be lighted at a time is necessarily very limited, which means that the cost per plant, even one penny per unit, is very high, in fact, too high, except under special circumstances, such as to enable a market gardener to get plants forward for Christmas or Easter or

treatment, as this would involve less labour than moving the plants to positions under fixed lamps.

The next commercial application discovered was in connection with the pricking out or transplanting of seedlings. Every gardener, amateur or otherwise, is fully aware how, on the day after the transplanting of seedlings, most of them fall over and wilt. Now it is well-known that any check in the growth of either a plant or an animal when young has its effect ever after. The discovery was made, however, that when such seedlings were exposed to intensive illumination for one night, not only did they not wilt, but with one night's treatment they appeared to have put on a week's growth and to be exceptionally strong and healthy.

In recommending this mode of lighting to market gardeners, the obvious course is to advise its application in conjunction with automatic time switches and the use of the light between midnight and 6 a.m.—at which time, undoubtedly, most of the electricity supply undertakings would be prepared to grant special rates. It is a matter of great interest to all associated with the electrical engineering and market gardening industries to find that there are excellent possibilities of commercially applying what has hitherto

* *Electrical Review*, Oct. 30, 1925, p. 685

only been a scientific feat. True, the scientific work, so far, is still in its early stages and cannot by any means as yet be described as an exact science. To begin with, different varieties of plants seem to grow better under different intensities of illumination, thus there is scope for considerable economy in the application of the light. For the time being 1,000 watt gas-filled lamps, placed three feet above the plants, will give satisfactory results, but in many cases undoubtedly more light is being supplied than is necessary, yet, on the other hand, it is only just sufficient for many plants. Environment must always play its part, and the gardener must always be a man who is skilled in the culture of plants. For one thing, if care is not taken, some plants will become too 'leggy,' i.e., lengthened out too much, or else show effects of forcing.

Plants may be roughly classified from a 'light' point of view as (a) those which respond to long days, and therefore bloom in the summer time, and (b) plants which require only a short day (less than twelve hours), and therefore bloom early in the spring or late in the autumn. There is still another class (c) to which the length of day seems immaterial, and which therefore bloom all the year round."

A point which seems to emerge from the interesting and important experiments so lucidly described above by Mr. Matthews, is that ultra-violet rays are not apparently of such vital importance as they are often supposed to be in the stimulation of plant growth. We may presume that the gas-filled lamps used in the experiments were those of the ordinary commercial type, in bulbs of glass impervious to ultra-violet rays, and it would be interesting to watch the effect of lamps of the same rating but in quartz or vitra-glass bulbs, sympathetic to ultra-violet rays. Theoretically, the stimulating effect should be materially increased.

Those who have submitted themselves to simple, modern, high-power lamp treatment, or "sunlight" treatment, as it is popularly called, are aware of the extraordinarily soothing effect of the artificial sun's rays on the human body. They are probably right in ascribing some part of the beneficent effect to the heat of the lamp, which is so considerable that it must be kept a certain distance from the skin. We shall probably not be far wrong if we ascribe some part of the remarkable effect of the lamps noticed by Mr. Matthews to the heat thrown on to the plants. If that is so, cold-light lamps would hardly have the same stimulating effect. It is to be hoped that Mr. Matthews may be able to continue his researches as they can hardly fail to be of importance to all interested in plant growth. *A. Grove.*

JONATHAN APPLES AND ARSENIC.

In view of the publicity anticipated as the result of summonses served on certain retailers in London for selling Jonathan Apples alleged to be contaminated with arsenic, a conference was held under the aegis of the Chamber of Horticulture towards the end of November.

The following representatives of the various sections of the industry attended:—

Mr. G. W. Leak (grower, and a past president of the Chamber of Horticulture), Mr. H. V. Taylor (Ministry of Agriculture), Mr. E. C. Boughton (Federation of British Growers), Mr. C. G. L. Du Cann (Horticultural Trades Association); Dr. S. G. Paine, Messrs. W. H. Miles, M.Sc., T. Parker and R. Sandwith (Chamber of Horticulture Technical Committee); Messrs. E. Collings, W. J. Craven, E. Bolt, H. J. Jones and L. Hunt (Chamber of Horticulture Insecticides Section); Messrs. George Monro, Ltd. (Wholesalers); Messrs. R. Buckingham, W. Pardoe, H. F. Thurlow and A. W. Hockin (Retailers); Mr. George Corner and Mr. G. C. Whadcoat, the Solicitors acting for the retailers summoned, and Mr. S. W. Hale (secretary).

A most interesting discussion took place, the legal gentlemen present gaining valuable knowledge. It was decided that no assistance

of a technical character could be offered the defence at the hearings, but it was unanimously agreed that the Chamber should watch the cases and be ready to send carefully prepared information calculated to prevent a possible Apple scare.

With this instruction, a committee was formed comprising Messrs. G. W. Leak, H. V. Taylor, E. C. Boughton, T. Parker, W. Pardoe, and S. W. Hale. The form in which any information should be disseminated to the public was left to this committee.

On November 25 two of the summonses were heard at the Hampstead Police Court. Mr. George Corner acted on behalf of the retailers and handled the defence in a quiet and tactful manner. In spite of this, considerable publicity was given in the evening newspapers. Although reference was made by both the prosecution and defence to the freedom from arsenic of the English Apple, the Chamber requested the daily Press to publish a more emphatic reassurance.

With the exception of only one daily newspaper, the Press gave publicity, either in part or in full to the memorandum issued by the Chamber. This memorandum was couched in words calculated to safeguard the practice of spraying Apple trees in this country, at the same time allaying any fear the public may have regarding the perfect safety of the home-grown fruits.

Further similar summonses against retailers are pending, and additional publicity is more than likely. The Chamber may then have to defend the home industry more vigorously, by way of contrasting the American climate and methods with our own.

The publicity given is greatly deplored, but, of course, is beyond control of the Chamber of Horticulture. The Chamber does intend, however, to do its best to dissociate the English Apple from such newspaper headlines as "Poison in Apples," "Arsenic in Apples," "Tainted by Spraying," and "Presence of Poison."

FRUIT REGISTER.

APPLE KING HARRY.

The writer of the short note on this variety on p. 392, states that it is not well-known and rarely listed in catalogues. I purchased a tree from Messrs. Veitch in 1905, and this Apple being quite new to me I watched it very closely and formed a favourable opinion of it—as a second-early sort. If the fruit is kept beyond its proper season, it quickly goes soft, and if tested for quality then would be considered rather an insipid variety.

To anyone contemplating planting early dessert varieties, I would recommend a trial of Feltham Beauty, which was introduced by Messrs. J. Veitch and Sons some years ago.

It partakes of some of the good qualities of one of its parents—being a yellow-fleshed, good looking Apple, of extra good quality for its season, as it is available when Apples of really good quality are scarce. Room should also be found for Langley Pippin and St. Edmund's Pippin, both of which are fairly early Apples of merit, and well worthy of a place in a collection.

APPLE BEN'S RED.

A LONG experience in gardening has convinced me that varieties of fruits (and also of flowers and vegetables) differ immensely in their behaviour in different localities and in various kinds of soil—which is a special reason why one recommends that a number of varieties should be planted, when making a new plantation or collection, in order to test which thrive best under local conditions.

Mr. Copley may be quite justified in recommending Ben's Red, which, he states, "is all that could be desired over the whole of the county of Glamorgan," and I hope others who have grown this Apple for a number of years will give their opinion of it.

Mr. Copley states that he is not quite clear what I mean on p. 392 by the statement that "in Kent I considered it a poor thing."

On looking again at the published note, it seems fairly clear that what I meant to convey was that my experience of Ben's Red, after an extended trial of it in a favoured fruit-growing county, was such that I should not consider I was justified in recommending it to intending planters.

With regard to the judges at Vincent Square agreeing with Mr. Copley as to the merits of Ben's Red, I am not at all sure that follows, as in a class reserved for that special variety, they were compelled to award the first prize to the best dish—but this is no proof that it is a variety which should be recommended to intending planters. *J. E. Weston.*

APPLE ESOPUS (SPITZENBERG).

This Apple (Fig. 196) is one of the leading commercial varieties in North America, where it is regarded as one of the best dessert Apples, but, like many of the other American Apples, it does not come to such perfection in this country. It is, however, well worth cultivating, for the tree is a good bearer and the fruits are of excellent flavour, with a yellow, firm, crisp flesh, and an abundance of juice. The skin is yellow on the shaded side, streaked and striped with broken red on the side exposed to the sun. As will be seen on reference to the illustration, the shape is conical or pearmain, even and regular in outline. The skin is smooth and strewn with yellow-russet dots.

This variety is said to have originated as Esopus, a district on the Hudson, settled by the Dutch. The fruits are in use from November to February. The tree is a slender grower with a drooping habit, and it requires good cultivation to bring it to perfection.

PITS AND FRAMES.

THERE are comparatively few gardens in which pits and frames are provided in sufficiency. The rule, generally, seems to be to build houses first and pits afterwards, but this order of things should be reversed, for until the garden is well-furnished with pits it can hardly be said that the more expensive structures are required. It is certainly most difficult to keep a conservatory well-furnished without the aid of pits in which to cultivate a considerable proportion of the subjects necessary for its embellishment. To the amateur pits and frames are of great value, as they are easily managed and well-adapted for growing the subjects most suitable to those who, of necessity, are bound to keep their garden expenses within circumscribed limits.

There are many forms of these most useful structures, ranging from the pit with turf, clay or wooden walls, to the more expensive brick structures which bear a close resemblance to a small house, minus the door and pathway. Brick pits are unquestionably the most valuable as they are adapted to the cultivation and protection of plants of all kinds not requiring a high temperature, and they have a very neat appearance. These pits may be built with either lean-to or span roofs, but in the majority of cases, the latter type is preferable. The plants grown in them are more fully exposed to the light on all sides and, moreover, they cost less in proportion to the accommodation they afford.

Span-roof pits, six feet in width and three feet six inches in height in the centre, with side walls two feet high will be found convenient as regards size; the length must be determined by the extent of the accommodation required. A width of five feet will be the most convenient for lean-to pits, and the back walls should be from three to four feet high, with front walls eighteen to twenty-four inches. If they are intended for the cultivation of early Cucumbers or Melons they should be two feet deeper, to afford room for the bed of fermenting material necessary for the plants.

It does not appear that any improvement can well be made in the ordinary form of lean-to pits usually constructed, for it is very desirable that

the lights should be portable and easily removed when not required. Span-roofed pits may be constructed so that the lights may slide up and down or they may be fixed to the pit at the top with hinges. If hinges are employed they should be of a pattern that will readily admit of the lights being removed when necessary.

The walls should, in all cases, be nine inches in thickness to within twelve inches of the glass and the remaining portion half that thickness. By this arrangement the pipes may be fixed practically without taking up space, and the ledge in the wall affords a first rate support for the pipes, indeed, nothing better could possibly be desired in this respect.

For heating the pits there can be no better system than hot water, and for pits six feet in width, a flow and return three-inch pipe on each side will suffice, while for smaller pits a single three-inch pipe will be sufficient to keep the

require much water, especially in cold weather, but should be examined occasionally in case any are in need of moisture. If the grower wishes to purchase trees grown in the open ground, and pot them, these should be obtained in the autumn and potted so soon as they are received. The pots should be of a size that will just hold the roots without crowding them; they should be well-washed and carefully crocked to provide efficient drainage, which is a most important detail, in the cultivation of fruit trees in pots. The compost used for potting should be strong without being unduly rich. There is no better material than the top spit from an old pasture, as fibrous as it is possible to get it. This should be pulled to pieces about the size of a cricket ball, and some of the larger portions placed over the crocks, grass side downwards. To three parts of this loam,

remains in the open. Trees purchased in pots may be fruited the following season, and it is well to fruit them the first year in their original pots; if they require it, they may be re-potted the next autumn. The following season the trees which have been standing out-of-doors all the previous year, may be fruited thus giving the newly potted trees a season's rest. Fruit trees in pots will not submit to hard forcing, neither should this be necessary if they are placed indoors early in the year. The grower will use his own judgment as to when to start the trees. If he requires fruit early in the summer he should house the trees early, but they should always be allowed to break into growth without the use of fire-heat. A little warmth in the pipes will be beneficial in dull weather whilst the trees are in bloom. *R. W. Thatcher, Carlton Park Gardens, Market Harborough.*

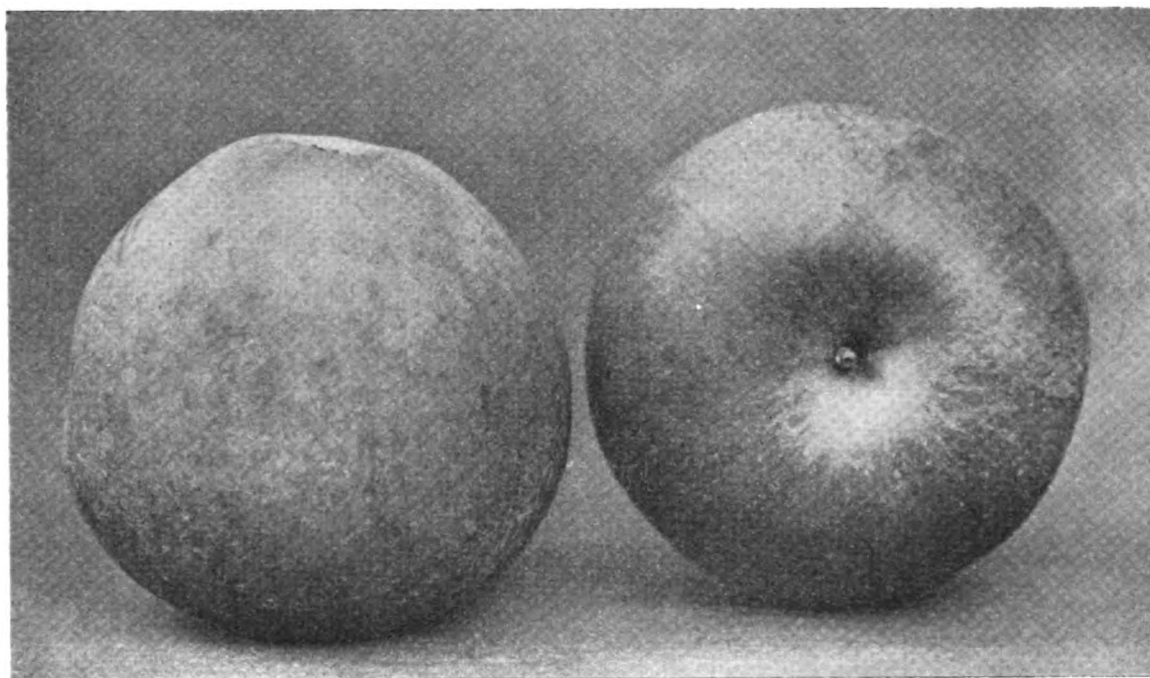


FIG. 196.—APPLE ESOPUS (SPITZENBERG) (see p. 470).

temperature quite as high as it will be necessary to maintain it at all seasons of the year. In the winter, of course, the fire-heat must be assisted by coverings of mats, long litter or other suitable material. *W. Auton.*

FRUIT TREES IN POTS.

THE cultivation of fruit trees in pots presents no great difficulty to anyone possessing a fair-sized span-roof or lean-to greenhouse, and one great advantage is that the trees may be placed in the open during the autumn and winter, thus making room for Chrysanthemums and other plants. The best types of trees for pot culture are the pyramid and bush, and if the house has plenty of head-room a few half-standards may be added. These may be stood at intervals in the house and the dwarf trees placed between them. The whole house will present a pleasing sight on an early spring day when the trees are in bloom.

Potted trees received from the nursery should be carefully unpacked, and if despatched in the late autumn they should be stood outside and plunged in ashes until the time comes to remove them indoors. To prevent damage to the pots by severe frosts they should be protected by a thick covering of leaves and litter, or half-decayed manure. The trees will not

add one part of well-decayed horse droppings with a liberal addition of crushed mortar-rubble and half-inch bones. I do not advise the use of artificial manures in the potting soil; these will be more useful when the roots are well established in the compost. Any roots that require it should be trimmed with a sharp knife before potting, and when engaged in this latter operation, work the soil carefully between the roots, adding good lumps of the turf as the work proceeds. Ram the soil firmly by means of a large potting stick, taking care not to damage the fibrous roots. Fill the pot to within two inches of the rim and label each tree as it is finished.

When the trees are potted remove them to an open spot out-of-doors, and plunge them in ashes. They will not require watering if the soil is in a fairly moist condition. The trees may be allowed to remain in the open for twelve months. During the summer they will require constant attention in the matter of watering and keeping them clean. They should not be allowed to fruit, even if they show a tendency to do so, but rather encourage them to build up good fruiting wood, well set with fruit buds. The mulch may be removed in the spring, but the pots should remain plunged in the ashes. This will not only prevent them being blown over by strong winds, but will also help to conserve the moisture. It is a good plan to purchase two sets of trees, so that one batch may be fruited under glass whilst the other

VEGETABLE GARDEN.

BETROOT VARIETY TRIAL.

I HAVE now completed a Beetroot variety trial, conducted with a view to ascertaining the cropping capacity of six varieties and of marking their degree of resistance to the Beet or Mangold fly (*Anthomyia betae*).

The following varieties were included in the trial:—Nonpareil, Obelisk, Cheltenham Green-Top, Carter's Blood Red, Dell's Black-leaved, and Long Exhibition Black. The seeds were sown on May 4, in good loam, and in drills made fifteen inches apart. Each drill was nine yards long, and the seedlings were thinned to nine inches apart. The crop was lifted on November 19, and the roots of one drill of each variety weighed.

The following are the weights recorded:—Nonpareil, 56 lb.; Long Exhibition Black, 51 lb.; Cheltenham Green Top, 49½ lb.; Obelisk, 48 lb.; Carter's Blood Red, 46 lb.; Dell's Black-leaved, 41½ lb.

All the varieties made shapely roots, with the exception of Obelisk, which revealed an undesirable tendency to develop short forks at the base. This is a waste of material, and since Beets cannot be trimmed, it reduces the commercial value of the variety.

My records do not point to anything conclusive on the matter of resistance to the Beet or Mangold fly. *Geo. H. Copley, N.D.H.*

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

Aucuba japonica maculata.—On p. 429. Mr. G. Copley states, "Is the Spotted Laurel losing its dioecious character?" Unless there has been a misprint he evidently regards the above variety as a male form. Even if Mr. Copley's teachers were at fault, it is difficult to see how his observation could confirm their error; the flowers are plainly pistillate. While it is not impossible for a spotted male form to have been raised, propagated, and distributed, the spotted-leaved type commonly sold is female, and has been recognised as such for over forty years. It is only fair to state that I have, on certain occasions, seen plants bearing a few scattered berries when there was, so far as could be ascertained, no male plant within a mile or so. Bees travel two miles in search of honey, so it is not impossible for the flowers to have been fertilised by pollen from a long distance. Like many other good plants, the Spotted Aucuba attained a popularity which has made it common and neglected. Fifty years ago it was planted everywhere in sun and shade. In the full sun it often turns a miserable yellow, and in summer droughts is even blistered to a deep black before dying. In the shade it flourishes, and the spots being less conspicuous, it is a handsome evergreen, especially useful as a wind-break under trees where few other plants will grow. If, when the desired height is reached, a male plant is introduced to the colony, the hitherto fruitless plants will be covered with clusters of handsome berries. If the ordinary Spotted Aucuba has been propagated from one common stock it is difficult to understand the difference in the size of the berries on individual plants, more especially because this difference is retained after propagation. Among the green forms there is a still greater variation in the size and quantity of the fruit borne, and the stature of the plants. *J. Comber, Nymans Gardens, Handcross, Haywards Heath.*

Coral Spot Fungus.—The remarks on this fungus by *Somersel* on p. 410, show that it is capable of causing widespread destruction in gardens, and it behoves every grower to do his utmost to stamp out the disease. From long years of observation, I am convinced that this fungus is a great source of danger to the public on highways, causing the sudden breaking away of limbs of large trees, which have been killed by *Nectria cinnabarina*. From these falling branches loss of life and maimed limbs occur every year. Having had charge of twelve miles of avenues of trees, I have discovered in every instance where a branch was affected and the foliage turning yellow that Coral Spot fungus was responsible. The Sycamore and common Elm are the trees most liable to be affected, and the sudden falling of large limbs from Elms is a common occurrence and a great source of danger. The best remedy against the disease is to use a mixture of Stockholm tar and best quality sulphur. One quart of tar placed in a small bucket and brought gently to the boil should be mixed with a quarter of a pound of sulphur, and the mixture thoroughly stirred. This specific should be applied as it cools, by means of a brush, to the affected parts. If the fungus has only recently attacked the branch or trunk, the application of the tar mixture will prevent the disease from spreading. Where, however, the fungus has wholly encircled the bark, nothing short of cutting out the limb at its junction with the trunk will suffice. Wounds on trees should be made smooth with a sharp knife and coated with the tar mixture. It is also valuable to stop the spread of canker, gumming and all other diseases affecting trees, and it will kill scale insects on fruit trees. No one need have the slightest misgivings in using this specific, which was recommended to me by a prominent analytical chemist, to whom I was head gardener. *Victor H. Lucas, Hurworth-on-Tees, Darlington.*

SOCIETIES.

ROYAL OXFORDSHIRE CHRYSANTHEMUM.

THIS society's show, held in the Town Hall during the past month, gave evidence of advance in quality and an improvement in staging. Popular prices were charged for admission, and the hall was crowded on both days.

There were three groups of Chrysanthemums not for competition. The one sent by Mrs. G. H. MORRELL was a feature of the show, and well up to the standard of exhibits from the Gardens of Headington Hill Hall. The group occupied the whole of the large platform and extended down to the floor of the hall. This wonderful display, arranged by Mr. A. GIBSON, the gardener, was awarded a Large Gold Medal.

Mrs. G. H. MORRELL won the Fifty-guinea Cup last year, and as no exhibitor may win it two years in succession, the donor of the Cup presents a replica each year to the winner. This year's winner of the handsome trophy presented by Messrs. Grimby Hughes, was a charming and well-arranged group from Messrs. GEE, Banbury Road, Oxford. The quality and freshness of the Chrysanthemums throughout were notable, and one plant of Mrs. R. LUXFORD carried large numbers of blooms. *J. MASSIE, Esq.*, of Headington, sent an exhibit of great merit including some very fine *Codiaeums*; Mr. Dawes, the gardener, was deservedly congratulated on this fine group which received a Gold Medal.

In the competitors' section for a miscellaneous group of flowering plants, Messrs. WEST AND SONS won first prize; Mrs. LESSING, second; Mr. T. H. ROSE, third. For table plants Mrs. D. FRASER, Mrs. LESSING, and Mr. T. H. ROSE received the awards.

In the class for nine varieties of Japanese Chrysanthemums, three blooms in each vase, some very fine blooms were forthcoming. Those staged by Capt. BRASSEY (gr. Mr. Quinn), won the first prize. It is interesting to note that this exhibitor has won the Harvey du Cros Silver Challenge Bowl three years in succession, and it now becomes his own property. Amongst his varieties were Mrs. Peter Murray, Mrs. J. Gibson, Mrs. A. Davis, Majestic, and three wonderful blooms of Rosemary Simmonds. The second prize went to Sir MORTIMER SINGER (gr. Mr. Johnson), for a very fine array of blooms, his Princess Mary, M. Sargent and Mrs. G. Drabble being especially good.

For twenty-four Japanese blooms, distinct, Capt. R. BRASSEY led with a fine stand of blooms; second, Sir MORTIMER SINGER. For twelve Japanese blooms, distinct, Sir MORTIMER SINGER led; second, Mr. G. D. PARKER; third, Mrs. W. FRASER. Mrs. LESSING was first prize winner for six white blooms, and Sir MORTIMER SINGER for six yellow, and Mrs. LESSING for six of any other colour.

Single varieties were finely shown; first, Sir MORTIMER SINGER; second, Messrs. WEST AND SONS. For a decorated basket of Chrysanthemums, Mr. W. T. MATTOCK led; second, Messrs. GEE; third, Mrs. F. MASTERS.

There was a splendid show of Apples, and competition was keen. For twelve dishes, distinct, six dessert and six culinary varieties, Mrs. E. L. K. ELLIS led with good examples of Rival, Ben's Red, Newton Wonder and Chelmsford Wonder; A. S. B. TULL, Esq. (gr. Mr. C. Taylor), was second, showing fine samples of Cox's Orange Pippin, Charles Ross and Chelmsford Wonder. A. S. B. TULL, Esq. won first prize for a dish of Blenheim Pippin; second, Mrs. C. W. BOWLES; third, Rev. E. H. ALLINGTON. Dessert Apples were best shown by Mr. E. L. K. ELLIS and A. S. B. TULL, Esq., while for one dish of culinary varieties Mr. G. D. PARKER excelled.

The best three dishes of dessert Pears came from the gardens of Dr. A. W. NEILL.

The Grape Classes were keenly contested, A. S. B. TULL, Esq., led for black Grapes with good bunches of Gros Maroc; second, Sir MORTIMER SINGER, with Alicante; third, Rev. E. H.

ALLINGTON. Showing the best white Grapes Sir ARTHUR EVANS led with good bunches of Muscats; second, A. S. B. TULL, Esq., with, Trebbiano.

In the vegetables section competition was keen. For six dishes the first prize was awarded to Mrs. LESSING; second, Mr. A. E. BRADSHAW; third, Mr. G. D. PARKER.

Table decorations were very tastefully arranged. Mr. W. T. MATTOCK, Mrs. F. HOLLOWAY and Mrs. T. B. EDNEY taking the chief awards, while Mr. W. T. MATTOCK obtained first prize for a decorated dessert table.

The trade exhibits were particularly good, especially those from Messrs. FIELD AND JACOBS; Mr. J. MATTOCK, who staged a most excellent group of Roses; Mr. G. PRINCE, who also had on view a bold display of choice Roses; and Mr. A. ROWLES, Market Street.

BRITISH CARNATION.

DECEMBER 1.—Although it was a small show that the British Carnation Society held in conjunction with the R.H.S. fortnightly meeting on the above date, the exhibits reached a high standard of excellence.

AWARD OF MERIT.

Lady Hindlip.—An excellent fancy Carnation of, apparently, great freedom. The flowers are large, well-formed and regularly lined with deep rose-pink on a white ground. The blooms are pleasantly fragrant. Shown by Messrs. STUART LOW AND CO.

COMPETITIVE CLASSES.

There was only one collection of cut Carnations and this, shown by Mr. JAMES HUMPHREY, Wotton Hill Gardens, Bletchworth, was deservedly awarded the first prize. His blooms were particularly fine, and the varieties included Spectrum, of vivid colour; Crystal White, Mrs. Hamilton Fellowes and Lord Lambourne.

The class for twelve blooms in not fewer than four varieties brought splendid vases from R. CHETWYND STAPLETON, Esq. (gr. Mr. W. Meger), Headlands, Great Berkhamsted, and Sir CHARLES NALL-CAIN, Bart. (gr. Mr. T. Pateman) Brockton Hall Hatfield, who were awarded the first and second prizes respectively. The first prize exhibit included splendid blooms of Violet Mond, Lord Lambourne and Topsy, while in the second the very best were of Topsy, Snowstorm and Edward Allwood.

In the colour classes, which each required five blooms of any variety of the specified colour, Mr. JAMES HUMPHREY was especially successful with admirable blooms, and won most of the first prizes. His varieties were Crystal White, Betty Lou (light rose or deep pink), Laddie (salmon pink), and Spectrum (red). Topsy, which was shown by Sir CHARLES NALL-CAIN, was the best crimson, and in Benora he also had the best fancy variety. The second prizes were awarded to Sir CHARLES NALL-CAIN for Lady Northcliffe (salmon-pink), and Tarzan (crimson); to Mr. R. C. STAPLETON for White Pearl and Headlands Beauty (light rose), and a good purple sport from Miss WINNIE PRYOR (fancy).

The classes which were apparently provided for amateurs growing a limited number of plants were not so successful and all the first prizes were awarded to Mr. FRANK BURNET, Paignton, Kilmacolm, who staged creditable vases of Carnations.

At the end of the competitive classes Messrs. W. E. WALLACE AND SON had a most delightfully arranged collection of their own seedlings. These were displayed in large glass vases with long sprays of *Asparagus plumosus*, placed on black velvet-covered tabling. The very best of the excellent varieties were Enid, rich crimson; The Favourite, soft pink; Our Prince, bright scarlet; and Spectrum, a very large flower of light crimson colour.

HULL AND EAST RIDING CHRYSANTHEMUM.

THE Hull and East Riding Chrysanthemum Society held its annual exhibition on November 18 and 19 in the City Hall, which is well-adapted for a show of such large dimensions, and never before had the display of flowers been excelled.

While the hall was well-filled with choice Chrysanthemums and other flowers, the art gallery provided an excellent setting for the display of decorated tables, epergnes, baskets of flowers, and other devices for the arrangement of cut Chrysanthemums, which included a display of this popular flower suitable for a sideboard decoration. This last class provided a source of interest to the general public. Mirror groups were arranged at the base of each pillar on the two sides of the hall, and produced a very fine effect.

There was a large gathering at the opening ceremony which was performed by the Lord Mayor (Councillor F. Finn); the Rt. Hon. T. R. FERENS, P.C., presiding.

Mr. WITTY, superintendent of the public parks, staged some fine exhibits, which secured for him a Special Award of Merit.

Trade exhibits were again a great feature of the show. On the left of the entrance Messrs. E. P. DIXON AND SONS had a fine display of choice flowers, bouquets, wreaths, etc., and fruit, for which a Gold Medal was awarded. Messrs. D. WHITEHOUSE occupied most of the right-hand side of the hall with a most meritorious exhibit, while at the end of the hall Messrs. WHITE, of Charlotte Street, had an outstanding exhibit of choice Orchids, bouquets, wreaths and other floral designs. This delightful exhibit was most tastefully blended in colour, and was awarded a Gold Medal. Messrs. SUTTON AND SONS staged a choice collection of well-grown vegetables, all of which were of the highest quality (Gold Medal). Messrs. KEITH LUXFORD AND Co. staged fine blooms of Chrysanthemums for which a Gold Medal was awarded. Other trade exhibits were by Messrs. REAMSBOTTOM AND SONS, Messrs. MILLER BROS., Messrs. D. TOYNE-TOYNE AND SONS, and Messrs. M. A. LINSLEY AND DAUGHTERS. The Crush Room was set apart for the staging of vegetables grown by allotment holders, and the quality of the produce reached a very high standard. The total number of exhibitors was ninety-seven.

In the class for a group of Chrysanthemums interspersed with other flowering plants and foliage, on the floor, in a circle ten feet in diameter, the first prize, a Silver Cup, presented by the Rt. Hon. T. R. FERENS, and £7 7s., was awarded to the donor of the cup (gr. Mr. A. C. Storey) for a very pleasing exhibit; second, ARNOLD RECKITT Esq.

The same exhibitor was an easy first prize winner for a mirror group, and won the Silver Cup presented by Messrs. E. P. DIXON AND SONS, LTD., using with fine effect, bronze Molly Godfrey Chrysanthemums, Crotons, Calanthes and Gloire de Lorraine Begonias; second, A. D. HALL WATT, Esq.

For twenty-four Japanese blooms in not fewer than eighteen varieties, a Silver Cup was presented by the ex-sheriff of Hull (Councillor F. Firon), and it was won by T. W. G. HEWITT, Esq., Old Hall, Grimsby, with a very fine exhibit which contained a very good flower of Julia. The National Chrysanthemum Society's Certificate was awarded to this exhibit; second, Miss BENNET, Westlands, Grimsby. For twelve blooms of Japanese Chrysanthemums, these exhibitors were placed in the same order, but it was a very close competition.

In other classes for cut flowers Miss BENNET, Grimsby, won six first prizes.

Begonia Gloire de Lorraine was especially well-shown, and credit is due to the three prize winners in producing such excellently-flowered plants. First, A. D. HALL WATT, Esq.; second, the Rt. Hon. T. R. FERENS, P.C. Cyclamens were also well-shown, the first prize being awarded to Sir PHILIP CUNLIFFE LISTER.

Competition in the open fruit classes was not very keen, but most of the fruits reached a very fair standard of merit. In a class for white Grapes, O. SANDERSON, Esq., was first, and A. D. HALL WATT, Esq., second, while in the class

for two bunches of black Grapes the awards were reversed.

Miss BENNET was successful in a class for four dishes of dessert Apples, while in a class for the same number of culinary Apples, Mr. J. W. DUCKER was first.

For a collection of vegetables arranged on a space six feet by three feet there were eight competitors, all of whom staged high-class produce. The first-prize (a barometer, presented by Alderman W. Hakes, and four guineas), was won by Mr. H. E. HAGUES; second, Major W. N. HILLAS.

Nineteen classes were provided for allotment holders, and here the competition was very good. The minimum number of exhibitors in any one class was eight, while the maximum number was twenty-five. The produce shown reached a very high standard, and great credit is due to the allotment holders of Hull for putting up such fine displays.

A Silver Challenge Trophy was presented by Councillor Costello, J.P., for a collection of eight distinct kinds of vegetables in a class open to allotment group associations. The first prize was awarded to the NEWLAND HORTICULTURAL SOCIETY; second, Messrs. RD. HODGSON AND SONS' RECREATION CLUB.

SMITHFIELD CLUB.

ALTHOUGH the exhibition of fat stock at the Agricultural Hall, Islington, is an annual event of great importance to agriculturists, it usually contains exhibits of some interest to horticulturists. At the exhibition which opened on Monday last the seedsmen's exhibits appeared to contain less of gardening interest than usual.

In the large display made by Messrs. SUTTON AND SONS the Mangolds, Swedes and Turnips were unusually fine. Sugar Beets proved attractive and showed from 19 to 22 per cent. of sugar content. The feeding value of Mangolds, as demonstrated by their sugar content, indicated the immense value of care in the selection of roots for seed purposes. Outward appearance is no guide, as was shown by a series of roots, averaging 10 lbs. weight each, but showing a sugar content ranging from 6½ ozs. to so high as 10½ ozs. Obviously, very careful testing and selection are necessary to ensure the perpetuation of strains possessing the highest food value. Specimens of the firm's specialities in Potatoes, Onions, Brussels Sprouts, Carrots and Beet, as well as flowers of their fine strain of Cyclamen, were on view.

Messrs. J. K. KING AND SONS contributed very fine Prizetaker Leeks, Matchless White Celery, and Empire Tomatoes in addition to their display of farm roots. Messrs. E. W. KING AND Co. exhibited seed Peas, capital specimens of New Intermediate Beet, Scarlet Model Carrots, and Perfection Brussels Sprouts, as well as fine strains of Swedes and Mangolds.

Farm roots were splendidly shown by Messrs. JAS. CARTER AND Co., who also showed specimens of Wheats and Grasses, wonderful examples of Maltese Parsnips, Record Onions, and Mr. Breese, King Edward, Advancer, Majestic, and Catriona Potatoes. Fine samples of seeds of this firm's specialities in Peas attracted a great deal of attention. Seed Potatoes were exhibited by many firms, some of whom had so small a display as half-a-dozen dishes of popular varieties, while others exhibited fairly extensively. Messrs. R. S. PATON, W. and A. GRAHAM, TILLEY WHYTE AND Co., A. FINDLAY, W. J. CAMPBELL, W. DENNIS AND SONS, DICKSONS, POWNEY BROS., J. A. GRANT, T. MCCLUNY, R. W. GREEN, W. J. REID, JAMES GARDINER, R. MORRIS AND SONS, H. J. SPEED, F. ALDERSON, and CANNEL AND SONS, were among those who devoted attention to seed Potatoes.

Messrs. E. WEBB AND SONS' exhibit was chiefly of farm roots, Wheats, Oats, etc., but they also had capital specimens of Katie Glover, Rector, Arran Comrade, Mr. Breese, Great Scot, Catriona, Arran Victory, and other excellent Potatoes, Globe and long Beets, Leeks, Parsnips, and Carrots, all representing fine strains. Messrs. HARRISON AND SONS, below

their agricultural roots, showed their excellent XXX Brussels Sprouts, Leicester Hero Leeks, Early Market Carrots, Leicester Red Celery, as well as handsome specimens of Lord Lambourne and Laxton's Superb Apples. Apples were also shown in fine size and colour by Messrs. W. SEABROOK AND SONS; indeed the fruits were so handsome that they did not need the polishing they appeared to have received. Of outstanding quality were their baskets and boxes of Cox's Orange Pippin, Rival, King of the Pippins, Bramley's Seeding, Newton Wonder, and Monarch.

Excellent strains of farm and garden roots were represented by specimens shown on Messrs. TOOGOOD AND SON'S stand. Messrs. KENT AND BRYDON devoted most of their attention to Potatoes, and their varieties included Kerr's Pink, Tinwald Perfection, Field-Marshal and Arran Comrade, in fine condition. Messrs. FIDLER AND SON were the largest exhibitors of Potatoes and they made a most interesting display in which coloured varieties were prominent. The most notable of these coloured varieties were Red King, Edgecote Purple, Rob Roy, Edzell Blue, Arran Victory, Crimson Beauty and King Edward.

Messrs. GARSTON'S showed their pedigree Wheats and Oats and a good strain of Sugar Beet. Mr. T. A. SCARLET, besides displaying seed Potatoes in variety, showed good strains of Brussels Sprouts and Savoys and well grown plants of the Edina Black Currant.

All the exhibits referred to were in the spacious gallery of the Agricultural Hall, where there was also an extensive display of agricultural implements, including a wide machine for drawing the drills and sowing five rows of Maize at one time.

Obituary.

S. T. Farish.—We regret to announce the death, on November 30, of Mr. Samuel T. Farish, Todhillmuir, Dumfriesshire, well known as a Potato raiser and grower. Mr. Farish, who was seventy years of age, devoted much of his attention to the raising of new Potatoes, and obtained a considerable amount of success in his enterprise. His first prominent success was with Scottish Queen, which was in considerable vogue for some years. This was followed by his introduction of other varieties, one of the most notable of these being Rhoderick Dhu, which has obtained several high awards. Quite a number of promising seedlings have not yet been sent out from Todhillmuir. Mr. Farish was a very successful agriculturist, and was held in high esteem by a very wide circle of friends.

James Penton.—On the 21st ult., Mr. James Penton, one of the old-time gardeners, passed away. He commenced his gardening career at Hartley House, Blackwater, subsequently becoming foreman at Farnborough Hill, Hampshire. On the recommendation of the late Sir Harry Veitch he became gardener to W. E. Boucher, Esq., Grateley House, Andover, a position he filled for over fifty years, retiring therefrom several years ago to spend the evening of his life with his daughter at Southampton. Mr. Penton was a keen cultivator, and observer in all branches of horticulture, and was especially successful with hardy shrubs, Rhododendrons and herbaceous plants. He had a charming personality and was always ready to give advice and practical help to those in less favoured circumstances than himself. I visited him in June last and was impressed with the remarkable memory he had for gardening and gardeners. Mr. James Penton, who had reached his eighty-first year, was laid to rest in Southampton cemetery on the 25th ult. He leaves two sons and five daughters to mourn their loss; his eldest son is Mr. W. J. Penton, gardener to General Sir Arthur Paget, Warren House, Kingston Hill, a clever gardener and an active member of the Committee of the United Horticultural Benefit and Provident Society. T. R. L.

MARKETS.

COVENT GARDEN, Tuesday, December 8th, 1925.

Plants in Pots, etc.; Average Wholesale Prices
(All 48's except where otherwise stated).

	s. d.	s. d.		s. d.	s. d.
Adiantum			Erica gracilis,		
cuneatum	10	0-13 0	48's per doz.	24	0-30 0
per doz.	10	0-12 0	—nivalis, 48's,		
Aralia Sieboldii	9	0-10 0	per doz.	24	0-36 0
Araucarias, per			Above varieties		
doz.	30	0-42 0	in 60's, per		
Asparagus plu-			doz.	12	0-15 0
mosus	12	0-18 0	—in Thumbs,		
—Sprengeri	12	0-18 0	per doz.	9	0-10 0
Aspidistra, green	36	0-60 0	Marguerites, 48's		
Asplenium, per			per doz.	18	0-21 0
doz.	12	0-18 0	Nephrolepis in		
—32's	24	0-30 0	variety	12	0-18 0
—nidus	12	0-15 0	—32's	24	0-36 0
Cacti, per tray			Palms, Kentia	30	0-48 0
—12's, 15's	5	0-7 0	—60's	15	0-18 0
Chrysanthemums, pot			Pteris, in variety	10	0-15 0
grown, in variety,			—large 60's	5	0-6 0
48's, per doz.	15	0-24 0	—small	4	0-5 0
Crotons, per doz.	30	0-45 0	—72's per tray	2	6-3 0
Cyclamens, 48's			of 15's	2	6-3 0
in variety, per			Roman Hyacinth		
doz.	24	0-30 0	on bulbs, per		
Cyrtomium	10	0-25 0	doz.	4	0-5 0
Erica hyemalis			Solanums, 48's,		
—48's, per doz.	24	0-30 0	per doz.	15	0-18 0
—60's, per doz.	15	0-18 0			

Cut Flowers, etc.: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Adiantum deco-			French Flowers—		
rum, doz. bun.	10	0-12 0	—Narcissus,		
cuneatum, per			Paper White,		
doz. bun.	9	0-12 0	per doz. bun.	8	0-9 0
Arums (Richar-			—Narcissus		
dias) per doz.	10	0-12 0	Soliel d'Or,		
Asparagus plu-			per doz. bun.	9	0-10 0
mosus, long			—Parma Violeta,		
traills, 6's,	2	0-3 0	per bun.	7	0-8 0
med. sprays	1	6-2 6	—Bannunculus,		
short	0	9-1 3	scarlet, per		
—Sprengeri, per			doz. bun.	9	0-10 0
bun.	1	6-2 0	—carmine, per		
long sprays...	1	6-2 0	doz. bun.	8	0-9 0
med. " "	1	0-1 6	—orange, per		
short " "	0	4-1 0	doz. bun.	12	0-15 0
Bouvardia,			—Chillies, red		
white, per			and yellow,		
doz. bun.	15	0-18 0	per pad	6	0-7 0
Camellias, white			—Solanum		
per box, 12's	3	0-3 6	berries, per		
Carnations, per			pad	15	0-18 0
doz. blooms...	3	6-5 6	Gardenias, per		
Chrysanthem-			box, 12's, 18's	10	0-12 0
ums			Heather, white,		
white, large			per doz. bun.	10	0-12 0
blooms, per			pink, per doz.		
doz.	6	0-8 0	bun.	9	0-12 0
—yellow, large			Honesty, per		
blooms, per			doz. bun.	18	0-30 0
doz.	5	0-6 0	Hyacinths, Roman,		
—pink, large			per doz. bun.	27	0-36 0
blooms, per			12's	27	0-36 0
doz.	6	0-7 0	Lilac, white, per		
—bronze, large			doz. sprays...	8	0-9 0
blooms, per			Lilium longiflorum		
doz.	5	0-6 0	long, per doz.	5	0-5 6
above colours—			—speciosum		
medium blooms,			album, long,		
per doz.	4	0-5 0	per doz.	4	0-5 0
—white spray			—short, per doz.	3	6-4 6
per doz. bun.	24	0-30 0	—speciosum		
—yellow spray,			rubrum, long,		
per doz. bun.	18	0-24 0	per doz.		
—pink spray,			blooms	3	6-4 0
per doz. bun.	21	0-27 0	—short, doz.		
—bronze spray,			blooms	2	6-3 0
per doz. bun.	18	0-24 0	Lily-of-the-Valley,		
Croton leaves			per doz. bun.	30	0-36 0
per doz.	1	9-2 6	Orchids, per doz.		
Daffodils, single,			—Cattleyas	24	0-30 0
per doz. bun.	30	0-36 0	—Cypripediums	5	0-7 0
Fern, French,			Poinsettia, per		
per doz. bun.	10	0-12 0	doz. blooms	18	0-24 0
French Flowers—			Roses, per doz.		
—Acacia (Mi-			blooms, Rich-		
mosa) per doz.			mond	6	0-8 0
bun.	12	0-15 0	—Liberty	6	0-8 0
—Anemone De			—Madame		
Caen, per doz.			Butterfly	6	0-8 0
bun.	18	0-24 0	—Madame Abel		
Eucalyptus, per			Chatenay	4	6-6 0
pad	5	0-6 0	—Melody	6	0-8 0
—Marguerites,			—Molly Sharman		
yellow, per			Crawford	3	0-4 6
doz. bun.	2	6-3 0	—Ophelia	6	0-8 0
			—Sunburst	6	0-8 0
			Smilax, per doz.		
			traills	2	0-2 6
			Violets	4	0-6 0

REMARKS.—Although the demand has been rather below the normal during the past week, most flowers have advanced in price owing to much reduced supplies from all quarters. Amongst Chrysanthemums, bunched stuff has been preferred to the disbudded varieties, and have consisted of Heston White, Niveus, Winter Cheer, Yellow and Bronze Wilcox, Tuxedo, Nagoya and Baldeck's Crimson. The principal sorts represented by disbudded blooms are Chesham White, Ivy Gay, December Gold, Favourite, Mac-Niece and Ember Bronze. A good selection of single varieties is available in disbudded blooms and

sprays in bunches of all colours. Amongst Roses Madame Abel Chatenay, Madame Butterfly, Golden Ophelia, and Mrs. Stevens are the principal sorts; prices are similar to those quoted last week, as also is the case with Carnations. The newest arrivals in this department are single Daffodils, Trumpet Major, Poinsettias and Roman Hyacinths; a few scarlet Tulips have been on sale during the past week. Arums (Richardias) are very limited in quantity therefore prices are considerably higher for the best blooms. Lillium longiflorum, and white and pink L. speciosum, are again firmer in price, as also are Lily-of-the-Valley, Gardenias and Princess of Wales Violets, the latter having become very scarce owing to the severe weather. The first consignment of Freesias came to hand this morning from Guernsey. Several crates of Mistletoe arrived during the latter part of last week. Holly is reported to be very lightly berried, and very high prices are anticipated for good samples. A few crates have already been received from France.

Vegetables: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Asparagus—			Lettuce.		
—English	4	0-8 0	—French Cos,		
—Paris Green	9	0-10 6	per doz.	—	5 0
—Sprue	1	3-1 6	Mushrooms,		
Batavia	2	0-2 6	—French	1	6-2 6
Beans—			cups	3	0-4 0
—French, per			—Broilers	1	6-2 6
basket	4	0-6 0	Onions—		
—Madiere, per			—Dutch	7	0-7 6
basket	2	6-6 0	—English, per		
—Forced, per lb			cwt.	7	6-8 0
—Finest	3	0-3 6	—Valencia	9	0-10 0
—Best	2	0-2 6	Parsnips, per		
Beets, per cwt.	6	0-8 0	cwt.	6	0-7 0
Cabbage, per			Potatoes—		
tally	6	0-10 0	—King Edward,		
Celery, per doz.			per cwt.	6	0-8 0
fans	16	0-30 0	—others	5	0-6 0
Cauliflowers			New Potatoes—		
—St. Malo, per			—Algerian	0	3 3½
crate	8	0 9 0	—Azores, per		
Carrots, per bag	6	0-9 0	case	20	0
Chicory, Belgian			—Guernsey	0	5-0 10
per lb	—	—	Seakale, per		
Cucumbers, per			punct	2	6-3 0
doz.	18	0-27 0	Sprouts, per i		
Endive, per doz.	2	0-8 0	bag	3	0-5 0
Horseradish, per			Savoy, per doz.	1	6-2 6
bundle	1	3-2 0	Tomatoes, English,		
Lettuce, per doz.	—	—	per strike—		
—cabbage, per			—pink, new crop	6	0-9 0
crate	4	0-5 0	—pink, old crop	2	0-3 0
Mint, forced	6	0-8 0	—blue	1	0-4 0
			—Canary	14	0-18 0
			Island	14	0-18 0
			Turnips, per cwt.	5	0-6 0

Fruit: Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, English,			Cobnuts, per lb	1	2-1 3
per 4-sieve			Grapes, per lb	—	—
—Cox's special	10	0-15 0	Alicante	1	6-2 6
—best	6	0-8 0	—Guernsey	0	10-1 6
—others	3	0-4 0	—Colmar	1	6-3 6
—Allington Pippin	2	0-4 0	—Muscat	3	0-6 0
—Ribston Pippin	4	0-5 0	—Almerian		
Apples, Cooking—			per barrel	15	0-22 6
—Bramley's			Belgian—		
Seedling	4	0-8 0	—Muscat	3	0-4 6
—Lane's Prince			—Black	1	3-2 0
Albert	4	0-6 0	Grape Fruit,		
—Blenheim			—Jamaica	16	0-18 0
Pippin	4	0-7 6	—Isle of Pines	22	0-24 0
Apples, American			—Florida	27	6-32 0
Jonathan	18	0-14 0	Lemons, Messina,		
—Californian	13	0-15 0	per box	16	0-22 0
—Oregon			—Malaga	18	0-22 0
Newtown	15	0-18 0	Pines	2	6-4 6
—York Imperial			Californian—		
barrels	28	0-32 0	—D'Anjou	23	0-24 0
—Spitzenberg	13	0-15 0	—Nels	25	0-26 0
Apples, Nova			—Comice, per i		
Scotia—			case	15	0-20 0
—Russets	20	0-25 0	—Kelfer, per		
—King's	18	0-24 0	barrel	25	0-28 0
—Blenheim,			South African		
barrels	16	0-21 0	—Oranges	12	0-18 0
—Baldwin	16	0-21 0	—Denia	12	0-20 0
Bananas	17	0-27 6	—Jamaica	15	0-16 6
Chestnuts,			—Murcia	12	0-20 0
Italian, per			—Malaga	12	0-20 0
bag	25	0-30 0	Walnuts, French,		
—French, per			per bag	7	0-8 0
bag	15	0-22 0	—Cornes	40	0-45 0

REMARKS.—The recent slight improvement in business has been maintained, but even so, trade should be better for the time of year. Imported Apples are in moderate demand and, if anything, are a shade dearer. Large English cooking Apples are being inquired for, and are realising slightly better prices. Supplies of English Cox's Orange Pippins now being marketed show a considerable increase in quantity and, where of good condition and colour, are meeting a satisfactory demand. Hothouse Grapes are a better trade, and no doubt the demand will continue until Christmas. Oranges are not plentiful and, on the whole, the general sample lacks quality. Some fine Doyenné du Comice and Winter Nels Pears are available from California, and selling at comparatively moderate prices. Pineapples are a little more abundant, and no doubt supplies of this popular and seasonable fruit will be sufficient for the demand, in spite of a keen inquiry from Germany. Nuts are scarce and dear, kiln-dried Walnuts being, perhaps, an exception. Forced Beans are scarce and dear. Forced Peas are at an exclusive price level. New Potatoes from Guernsey, the Azores, and the Canary Islands are not moving out at all well. Salads are an improving business. Prices for Mushrooms remain firm. Cauliflowers,

mainly from the St. Malo district, have had a better market, the cold weather having affected supplies of most green vegetables. A few new crop English Tomatoes are still coming to hand, but the trade is now relying on Canary Island Tomatoes for their requirements. The trade in old Potatoes is fairly good.

GLASGOW.

During the greater part of the week the conditions prevailing in the cut flower market may be described as quietly steady, but on Friday good blooms were dearer, and the general tone was firmer with an upward tendency in prices. Chrysanthemums are still dominating the daily sales, and supplies are well-maintained considering the advanced season. Small Thorpe ranged from 6d. to 1/- for 6's; large, 1/- to 1/4; Mrs. Roots, 1/6 to 2/-; Lucy Louppe, 1/- to 1/6; Jean Pattison and Sunshine, 1/- to 1/4; Florrie King, 1/- to 1/3; William Holmes, Wilcox and Pegram, pink and bronze, 10d. to 1/3; Sandown Radiance 9d. to 1/-, and Source d'Or, 8d. to 10d. Japanese decorative varieties made 5d. per bloom, and small Mme. Julian Valet, 3d. to 5d. per bunch. Sprays continue plentiful, and were worth from 3d. to 6d. for small bunches, and 7d. to 1/- for ordinary. Carnations were sold at 5/- to 6/- per dozen, while Madame Abel Chatenay, Ophelia and Madame Butterfly Roses again commanded 6/- to 8/- per dozen. Lillium longiflorum (Harrissii) and Richardias averaged 5/- to 6/-; L. lancifolium rubrum, 2/6 to 3/-; Lily-of-the-Valley were worth 2/3 to 3/-; English and French Violets made 2/- to 2/6, and Narcissi, 4/- to 5/- per dozen bunches. First consignments of Tulips and Ferns in bowls realised 2/- each.

A feature of the fruit market was the active demand for Valencia Oranges, imports of which are on a substantial scale for this early period of the year. The fruit, which is sweet and of medium size, brought the following values: 240's, 20/- to 23/- half-case; 300's, 17/- to 19/-; 360's, 13/- to 14/6; 504's, 13/- to 14/-; 420's, 25/- to 32/- per case, 714's, 25/- to 28/-. Prices for Murcia Lemons, 300's, fluctuated between 16/- and 20/- per half-case, and Jamaica Grape Fruit made 20/- to 22/- per case. Apples were firm at the advances recorded in the previous week, excepting the following three varieties which were cheaper: Ben Davis, 19/- to 22/- per barrel; Ganos, 20/- to 24/-; and Greenings, 32/- to 35/-. English-grown Cox's Orange Pippin declined 2d. to 8d. per lb. Winter Nels Pears, Grapes, etc., were unchanged. Scotch Tomatoes were worth 6d. to 8d. per lb.

In the vegetable section, English Carrots sold at 6/- per bag; Dutch, 4/6; Parsnips, 8/-; Globe Onions, 9/-; Dutch Brown, 7/-; French Cauliflowers, 4/- to 5/-; Lettuces, 1/3 to 1/6; Celery, 2/6 per bunch. Horse Radish 2/-, and Madeira Beans, 4/- to 5/- per chip. The markets will be closed on New Year's Day.

ANSWERS TO CORRESPONDENTS.

SHRUBS FOR PLANTING NEAR A WAR

MEMORIAL. D. W. As you seem to require only shrubs of a low-growing, bushy habit, we recommend the following: Evergreen—Aucuba japonica, Berberis Aquifolium, Box in variety, Cotoneaster rotundifolia, Euonymus japonicus and E. j. variegatus, Gaultheria Shallon, Gorse (double), Hypericum Androsaeum, and H. calycinum, Olearia Haastii, Privet (green and golden), Phillyrea Vilmoriniana, Rosemary (for remembrance), Skimmia japonica, and Veronica Traversii. In addition, if the soil does not contain lime, you could plant Andromeda japonica, A. floribunda, Kalmia latifolia, Pernettya mucronata, Rhododendrons in variety, and various Ericas (Heaths). The majority of the evergreen shrubs named above bear flowers or fruits in their season, are of a bushy habit, and may be kept within bounds quite easily. The list of deciduous, flowering or berry-bearing shrubs of a low-growing nature is somewhat limited, but the following are showy in their season:—Berberis Thunbergii, B. Wilsonae, B. subcaulialata, Cytisus nigricans, Deutzia gracilis, Genista tinctoria, G. hispanica, Philadelphus Lemoinei, P. Mantaud'Hermine, Spiraea japonica, S. j. alba, S. Anthony Waterer, and S. Thunbergii. Practically all the above are included in ordinary nursery stock, and should be obtained at reasonable prices.

Communications Received.—A. S. (Thanks for 2/- for R.G.O.F. Box).—J. C.—J. A. P.—A. T. H.—R. L. R.—Mrs. C.—E. N. B.—T. L.—A. J. M.—A. T. H.—W. A.—J. C.—A. B. J.

GARDENING APPOINTMENTS.

Mr. H. G. Revens, recently gardener to the late Mrs. ROBERT PAUL, The Boltons, Ipswich, and previously gardener to the late LEIGH HESELTINE, Esq., Rookery Park, Yoxford, Suffolk, as gardener to F. S. BRICE, Esq., Middlemead, Stoughton Drive, S. Leicester. (Thanks for 2/6 for R.G.O.F. Box.—Eds.)

Mr. E. T. Cox, previously gardener to Mrs. PENN CURZON, Watermouth Castle, Berrynarbor, North Devon, as gardener to Mrs. ERIC MANN, Kitemore House, near Farnham, Berkshire. (Thanks for 2/- for R.G.O.F. Box.—Eds.)



RHODODENDRON ORTHOCLADUM.

Photo C. P. Raffill

THE Gardeners' Chronicle

No. 2034—SATURDAY, DECEMBER 19, 1925

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SUPPLEMENT PLATE.

Rhododendron orthocladum.

AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 38.4°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Wednesday, December 16, 10 a.m. Bar. 30.4. Temp. 31°. Weather Sunny.

Roadside Trees.

It is welcome news to learn from a recent note in the *Times* that the Minister of Transport, Col. Wilfred Ashley, has taken the initiative in calling a conference of representatives of the Home County Councils for the purpose of discussing the roadside planting of trees. Certain powers with respect to this important subject are conferred on Local Authorities by the Roads Improvement Act of 1925 and the conference was called in order to encourage the County Councils to exercise their powers. Whilst applauding the step taken by the Minister of Transport we would suggest that he might extend his initiative yet further while there is time and consider, if he has not already done so, the question of the laying out of the new arterial roads. We hear much in these days of town planning but little is heard of the integral part of it, namely, street planning. Yet no one who has motored along the new stretch of the Great West Road can refrain from doubting whether when the road was laid out any consideration whatever was given to its planning from the points of view of the pedestrian and the amenities of the road. The idea seems to have been to create a

racetrack intersected occasionally by cross roads which require the watchful vigilance of policemen to prevent them from being death traps. It may, of course, be the case that the planning of this and other great new roads was made the subject of special enquiry and consideration and that alternatives, which would seem to us to be superior to that actually adopted, were only rejected reluctantly after mature consideration. It may be so; but we take leave to doubt it. Travellers acquainted with continental and American cities are aware that in these countries roads are sometimes built which bear central avenues, often beautifully planted, shady walks for pedestrians and shelter belts for all users of the road. It would be interesting to know whether such a scheme of planning has been considered in connection with any of the great new arterial roads. Such a system of road planning might, of course, prove more costly in execution than the present stereotyped style of road; but it is difficult to believe that it could not have been adopted—at all events in part; shady avenues, or at all events occasional arboreal islands, breaking the monotony and desolation of the tarry track. The subject of roadside planting is indeed of such great importance that it deserves not the casual consideration which is all that it has had until recent times, but systematic consideration by a permanent body composed of experts in trees and planting, as well as members of County Councils. The setting up of such a road planning advisory body need involve the community in no expense, for there are plenty of acknowledged authorities on trees and their suitability for planting in different types of road who would gladly give their services, finding their reward in the beautification of the countryside. Were such a body brought into being the first thing it would discover is that its knowledge, great though it would prove to be, is by no means complete, and it is certain that it would set about discovering new knowledge on the subject of roadside planting by the only method whereby such knowledge is to be discovered—that of experiment. Here again the cost of systematic experiment in the discovery and mode of training of trees suitable for roadside adornment need not be costly; far less costly indeed than the practice of planting haphazard—Plane and Chestnut and Lime, which trio appears to have exhausted the resources of knowledge of those engaged in tree planting. There are, of course, many facts known to botanists which require to be considered by the would-be roadside tree planter. There is, for example, the fact that every deciduous tree grown, even in the most open position, suffers each year from deficiency of light. As a consequence of the insufficiency of the sun light which reaches its more deeply placed leaves the tree obeys the law of summer leaf-fall. The Horse Chestnut, for example, planted no matter where in this country, loses naturally from this cause no less than one-third of its leaves before summer is past. What then must be the loss of leafage caused by this natural, premature mortality of leaves when the trees are growing in shaded positions. Anyone who watches the Lime leaves fall in mid-summer from the trees which grow opposite Magdalen College, Oxford, must realise that here is a physiological fact which should be within the knowledge of those who set out to plant trees in roads and streets. There are many other facts of like and of different order which must be taken into account in the scientific planting of

trees. To mention only one: since roadside tree planting became a practice many species of trees have been introduced of which some are superior to the old, much-used species. It is not necessary to develop the theme here and now in detail, for we think that it is self evident that street planning with special reference to the enjoyment of the pedestrian, as well as to the facilities of traffic, deserves the careful consideration of the Ministry of Transport. Hitherto no central body has existed which could take the initiative and though local authorities have done their best—sometimes with success—it is to be remembered that the majority of the members of such bodies are urban in their ideas and cannot be expected to possess an innate knowledge of the subject of planting and caring for trees. With a permanent advisory committee empowered to make or encourage well considered experiments the planning and planting of our roads and streets would enter on a new and undoubtedly better phase; for, needless to say, to plant trees as an afterthought, after road and paths have been made, is not a procedure calculated to secure the best results either in type of tree planted or in its growth after the planting has been done.

"The Gardeners' Chronicle" Almanac for 1926.—Our Almanac for the ensuing year, giving the dates of the principal flower shows in Great Britain, and of the meetings of horticultural and botanical societies, is now being prepared, and will be published in an early issue of the New Year. Secretaries of horticultural, botanical and other societies are requested to send the dates of their shows, meetings, etc., so soon as possible, in order that they may be included in the Almanac.

Echo of the Heemstede (Haarlem) Exhibition.—The Count de Kerchove de Denterghem, and the Committee concerned in arranging the Belgian portion of the exhibition at Heemstede last spring gave a banquet on Sunday, the 6th December, to MM. Pynaert and Spaë, respectively president and vice-president of the executive, who have been nominated officers of the Orange-Nassau Order; and M. De Smet, who is a Chevalier of the same Order. Many complimentary speeches were made, and a number of distinguished visitors attended the banquet.

National Dahlia Society.—The Committee of the National Dahlia Society has elected as honorary members, Mr. Richard Vincent, Junr., of Maryland, president of the American Dahlia Society; Mr. H. Hornsveld, of Baarn, Holland, the originator of the now popular Paeony-flowered Dahlias; and M. C. J. Wuyts, of Ledebourg (Ghent), founder and secretary of the Société Nationale Les Amis du Dahlia—the Belgian National Dahlia Society. This is done under the Society's by-law: "The Committee may, in their discretion, elect as Honorary Members foreign Dahlia experts whom it is especially desired to honour."

Vitality of an Earwig.—A contributor to a recent issue of *Nature*, mentioning that an earwig was found inside a high vacuum pumping set recently, states that the insect's presence there is a mystery. It was not discovered until the pumps had been running for a quarter of an hour, when it was seen crawling along the glass tubing. In the attempt to extract the earwig, "it was rather roughly treated, as it fell into the mercury vapour pump (cold), and was eventually poured into a beaker with the mercury, being entirely submerged for a few seconds." The earwig survived this varied treatment, and, when freed, actively crawled about, apparently uninjured!

Accident to Sir Jeremiah Colman, Bt.—We regret to learn that a severe accident has befallen Sir Jeremiah Colman, the President of the National Chrysanthemum Society, and chairman of the Royal Horticultural Society's Orchid Committee. It appears that Sir Jeremiah was skating on the lake at Gatton Park, Reigate, on Saturday, December 12, when, in endeavouring to escape collision with a lady who had fallen, his skate caught in a frozen twig and he fell heavily, breaking a thigh and a wrist. In a message conveying good wishes for Christmas to the members of the Orchid Committee, on Tuesday last, Sir Jeremiah expressed his regrets that he would not be able to attend several succeeding meetings. Later news—which his many horticultural friends will be glad to learn—is to the effect that Sir Jeremiah Colman is progressing as favourably as the severe nature of this untoward accident permits.

Damage by Skaters.—Occasionally, and, we are glad to say, only very occasionally, we learn that garden owners have been compelled to restrict opportunities for the public of viewing their gardens and pleasure grounds on account of damage done by a thoughtless minority. Now we regret to record that Mrs. H. K. Price, who generously permitted the public to skate on her large pond at Broadwater, Godalming, during the recent severe frosts, states that, in view of the damage done by "many people who did not skate, but trampled down the garden," she will not again allow the general public to skate on the pond.

The Guildford Gardeners' Association's Monthly Journal.—The December issue of this valuable little publication, which grows in volume and interest, contains accounts of the Association's Annual Meeting, the local Chrysanthemum show, a lecture on Dahlias by Mr. J. Cheal, and a useful calendar of work for the month. The last-named feature, which is written by members of the Association, covers the ground very well, and is a reliable cultural diary. Future events include lectures, which are to be given at different centres, on "General Gardening," "Herbaceous Borders," "The Upkeep of the Small Lawn," and "Vegetable Culture."

Gardeners' Society Concert at Saltwood.—An excellent concert was given by London artists at the Saltwood Village Hall, on Friday, the 11th inst., on behalf of the local Gardeners' Society. Miss Large, who was responsible for the arrangements for the concert, was presented with a beautiful bouquet of flowers.

Imported Fruit.—Mr. Austin Chadwick, general superintendent of the Manchester Corporation Markets Department, lecturing on December 15 before the British Cold Storage and Ice Association, alluded to the fact that over one-half of the principal fruits available for consumption in this country last year were brought from overseas.

Royal Horticultural Society's Meetings for 1926.—The Royal Horticultural Society will hold exhibitions and meetings during the ensuing year on January 12 and 26; February 9 (Annual Meeting) and 23; March 9 and 10; March 23 and 24; April 7 and 8; April 13 and 14 (Narcissus Show); April 20 and 21; May 4 and 5; May 18, 19 and 20 (Chelsea Show); June 1 and 2; June 15 and 16; June 22 (Amateurs' Show); June 29 and 30; July 13 and 27; August 10 and 24; September 7; September 21, 22 and 23 (Holland Park Hall Show); October 5; October 12 and 13 (Fruit Show); October 19 and 20 (Orchid Show); November 2, 16 and 30; and December 14.

The Kew List of Seeds.—The authorities at Kew have issued a list of seeds of hardy herbaceous plants, and of trees and shrubs, which for the most part have ripened in the Royal Botanic Gardens during 1925. These seeds are available only for exchange with botanic gardens and with regular correspondents of Kew. The list is a particularly interesting and extensive one. The names of herbaceous plants, of which seeds

are available, extends to twenty-four pages, and those of trees and shrubs to ten-and-a-half pages. This publication may be obtained from His Majesty's Stationery Office, Adastral House, Kingsway, London, for 1/- net.

Mr. E. H. Pearce.—To the flower-show attending public, Mr. E. H. Pearce is best known as a very successful exhibitor of magnificent Japanese Chrysanthemums. This is now somewhat in the nature of a side-line in his business life, for his chief energies are devoted to the training of lads in horticulture at the Lord Wandsworth Agricultural College, Long Sutton, Basingstoke. This important work he has carried out with conspicuous success through the eight years he has held the appointment, during which time he has "turned out" many lads, well-equipped with sound, practical knowledge of the profession they have adopted. The success of the training school has already necessitated a considerable enlargement of the



MR. E. H. PEARCE.

area allotted to gardening. Before taking up his present appointment, Mr. Pearce had been in considerable request as a lecturer to the Horticultural Society at Alton, where he was head gardener to G. F. Ferrard, Esq., at Moorland Hall. Mr. Pearce comes of gardening stock, and received his earliest lessons under his father who was a well-known gardener. After a few years he went to the Seend House Gardens, Melksham, Wiltshire, to gain additional experience, and made such good use of his time and opportunities that he soon became gardener to W. B. Lee, Esq., at Somerset House, in the same district. Seven years later he took charge of the gardens at Awbridge Danes, Romsey, and there commenced exhibiting; he was very successful at various shows, notably at Southampton, with vegetables and Chrysanthemums. After ten years at Awbridge Danes, Mr. Pearce moved to Great Maytham, Rolvenden, where he made extensive alterations to the gardens, making an Italian garden and a new Rose garden. When this work was finished, Mr. Pearce went back to Hampsire to take charge of the Moorland Hall Gardens, and thence to Long Sutton.

The Hill, Hampstead.—We understand that Lord Leverhulme's beautiful house and grounds, The Hill, Hampstead Heath, have been purchased by Lord Inverforth. The mansion is said to have cost half-a-million to erect, and the grounds of six acres are laid out in costly and elaborate style. It is a pity that they are divided in two by an ancient right of way, over which a

raised pergola has been erected to join the two portions of the garden. The Hill was built in the early part of the present century, an earlier building, erected in 1809, being demolished after less than one hundred years of existence. An account of The Hill gardens—with the famous terrace made of soil excavated when the Hampstead Tube railway was made—appeared in *The Gardeners' Chronicle* of December 28, 1912.

Staffs of Botanical Gardens and Departments.—In the form of an Appendix (No. 3), the *Kew Bulletin* has published a list of the Staffs in botanical departments at home and in the Dominions, India, the Colonies, and various protectorates. This is an interesting and extremely useful publication occupying seventeen pages, commencing with the staff at the Royal Botanic Gardens, Kew, and concluding with the staff of the Department of Agriculture at Rangoon, Burma. It is interesting to notice that no fewer than ninety-eight appointments in this list are held by men trained at Kew.

The R.H.S. Gardeners' Diary.—In its edition for 1926, this useful Diary retains the handy form and size that has continued for fourteen years. It is of especial value to all interested in gardening. The compact tables and commendably brief lists of plants at the commencement of the book, together with the "reminders" at the foot of each alternate page of the Diary proper, are very useful. The R.H.S. Gardeners' Diary may be obtained from our Publishing Department, post free, for 2/2.

A Fungus in the Tissues of Coniferæ.—At the meeting of the Linnean Society, held on the 3rd inst., an interesting communication from Professor F. J. Lewis, D.Sc., was read by the botanical secretary, Mr. J. Ramsbottom. This was entitled "A Preliminary Account of a Fungus in the Tissues of Coniferæ." Mr. Ramsbottom pointed out that there were several matters which were not settled in this preliminary communication. The behaviour of the fungus in relation to the root suggested that it was an ordinary ectotrophic mycorrhizal one. Concerning the fungus in the stem, it would be interesting to know whether it is constantly present or only occasionally, also whether it is connected with the mycorrhizal fungus. Accumulated evidence leads to the supposition that many Basidiomycetes may be concerned in forming mycorrhiza within the roots of the same species of Conifer, and field observation showed that two or three different types of mycorrhiza may occur on the same tree. If the stem-fungus was joined with the root-fungus, were all Basidiomycetes able to spread from the roots, either singly or in company? If an unattached fungal mycelium existed in the stem, there was a possibility of a state of affairs such as we have in *Lolium*, where there is an internal mycelium near the stem-apex; but it was more likely that we have a parasitic fungus, definite in its attack. A species of *Picea* may have a hundred parasitic fungi! In the discussion which followed, Mr. R. Paulson observed that mycorrhiza in Conifers was found on the quite superficial roots running an inch to an inch-and-a-half below ground, and that its presence appeared to depend largely on a sufficiency of moisture in the soil to permit of its development and continuance.

Belgian Chrysanthemum Society.—A new Society with the title of La Société Nationale des Chrysanthémistes has recently been formed in Belgium, on the initiative of M. Van den Wijngaerde, representing the Belgian Federation of Horticultural Societies. A preliminary conference of the new society was held on November 7, on the occasion of the Antwerp autumn exhibition, opened by M. Emile Draps, and subsequently presided over by M. Georges Caroly. M. Van den Wijngaerde explained to those present that the Society would be prevented by its constitution from holding exhibitions of its own, and would confine itself in this direction to assisting the exhibitors of Chrysanthemums at existing shows. It was not intended that the new society should in any way interfere

with work already being done, but it was hoped that it would form a bond of union between lovers of the Chrysanthemum throughout the country. It would also be occupied in endeavouring to regularise nomenclature, and would register and certificate new varieties, and an annual Conference would be held. M. Louis Sels, the Brabant horticultural instructor, was engaged in preparing a handbook for the use of Chrysanthemum growers, published in the two languages of the country (Flemish and French). M. Wijngaerde closed his address by a warm appeal to all Chrysanthemum lovers to join the new Society and thus assure its success.

Increase in Ferry-Boat Traffic.—It is interesting to note, from figures given in *Neptune*, an Antwerp maritime journal, that a very considerable increase has taken place in the produce carried by ferry between Zeebrugge and Harwich. In October and November, 1924, the number of wagons arriving from England was 63 and 25 respectively, as against 120 and 145 in the present year; and whereas in October, 1924, 361 wagons left Belgium for this country, in the same month this year the number was 900 wagons, and in November, 1,114 wagons, in spite of the fact that this has been a disastrous season for fruit.

Export of Potatoes to Spain and the Canary Islands.—The Spanish Government has informed the Ministry of Agriculture and Fisheries that an official certificate of health is now required to accompany consignments of Potatoes to Spain and the Canary Islands. The issue of such certificate involves inspection of the Potatoes, and the Ministry will be prepared to undertake this inspection in accordance with the arrangements already in force for the examination of Potatoes destined for export to other countries, for which similar certificates are required.

Appointments for the Ensuing Week.—Tuesday, December 22: Newcastle and District Horticultural Mutual Improvement Society's lecture. Wednesday, December 23: Sheffield Chrysanthemum Society's meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Conifers.*—I am very glad to find that the Horticultural Society has issued in its *Journal* a catalogue of Coniferous plants, with their synonyms. Such a catalogue has been sadly wanted for a long time; and although this may not, in the present state of our ignorance of Coniferae, prove wholly free from error, it does come before us with a satisfactory degree of authority, and cannot fail of doing great service, and proving a generally safe standard of reference to both buyers and sellers, and, in fact, useful to all who take delight in this most interesting tribe of plants. To show the want of some such authoritative catalogue, I have now before me a catalogue of Coniferae, sent out by a very respectable nurseryman; in that catalogue I find *Pinus Pallasiana*, grafted, price from 15/- to 21/-; a little lower down, *Pinus taurica*, 3/6. Now, if the Horticultural Society's catalogue be correct (as I for one believe it is), these two are identical; and surely, no lover of Pines would care to give from 15/- to 21/- for a worthless grafted plant (and grafted Pines are always absolutely worthless in comparison with seedlings) when for 3/6 he could procure a healthy seedling of the very same species, without any really permanent difference; and even if there be any trifling difference, so slight as to be of no real account or value, for use or ornament. Loudon makes *P. taurica* a mere variety of *Pinus Laricio*, but so he does *P. pyrenaica*; but more is known about species now than when he compiled his very useful *Arboretum*. I see Messrs. Lawson, in their list for 1850, sell their *P. Pallasiana*, grafted, at 21/- and *taurica* at 2/6, so that I imagine the real identity of the two is not sufficiently known; but I trust the Society's catalogue will now set this matter at rest. *D., Gard. Chron., December 21, 1850.*

ALPINE GARDEN.

ACHILLEA LEWISII.

THIS very useful rock plant is a garden hybrid, and like many hybrids, is extraordinarily free-flowering. One of its parents is said to be *Achillea tomentosa*, the other I forget; apparently the cross has occurred twice, and unfortunately it has received two names, for a plant identical with *A. Lewisii*, and I think reputed to be of the same parentage, is to be found in gardens and catalogues under the name of *Achillea King Edward*. I do not know who raised *A. King Edward* and named it thus. Nor do I know which of the two plants made its appearance first. It would be interesting if this point could be cleared up, and it would be a good thing if whichever name had priority could be definitely and exclusively used.

A. Lewisii was first introduced to me by Mr. W. E. Th. Ingwersen, some five or six

The soft sulphur of the flowers shows to especial advantage when grown in the neighbourhood of lavender blue. *Campanula pusilla* Miss Willmott makes a first rate companion for it, and another good neighbour—though the colour harmony is not so perfect as with the *Campanula*—is *Calamintha alpina*. *Campanula carpatica pallida* may also be put near *Achillea Lewisii*, and this, especially if prevented from seeding, will often continue in flower until quite late in summer, pushing up fresh crops of flower heads as the old ones are removed.

I have looked in Farrer's *English Rock Garden*, hoping to find the parentage of this hybrid, but I can find no mention of it under either of its synonyms, and am surprised that he overlooked so excellent a plant. *Clarence Elliott, Stevenage.*

ALYSSUM SINUATUM.

THIS *Alyssum* derives its specific name from the sinuate or waved form of its foliage, which is of a silvery-grey and is quite pleasing.

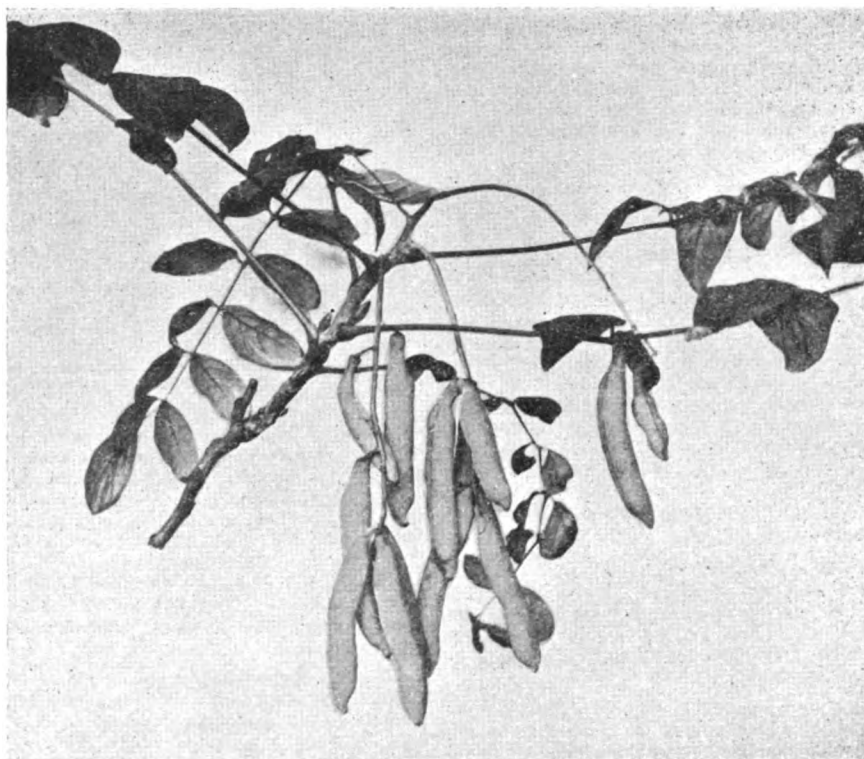


FIG. 197.—FRUITING BRANCH OF DECAISNEA FARGESII.

(see p. 480).

years ago, and the history that he then gave me of its origin was that he found it growing as a self-sown seedling in a rock garden at Croydon. He named it *A. Lewisii*, after the owner of the garden, Mr. Lewis.

Apart from all questions of origin, this plant is a great beauty. In general aspect it is like a smaller, daintier edition of *Achillea tomentosa*, and its flowers, instead of being the rather mustardy yellow of that species, are a delightful soft sulphur-yellow, like the citrinum form of the *Alyssum saxatile*. The plant forms close, neat mats of soft, feathery, moss-like foliage, with just a hint of pubescent, silvery sheen upon it. The height of the flower heads is about four or five inches.

A patch of *Achillea Lewisii* on our rock garden has been continuously in flower from early summer until November frosts came along and cut off the display, and even now one can find a delicate yellow blossom showing here and there, and umbels of buds waiting to respond to the first spell of genial weather. I know few rock plants which flower so persistently the year round as this good-natured little hybrid.

The plant grows about nine inches to twelve inches high, and has much the habit of bloom of the well-known Rock Madwort, *A. saxatile*, but the individual flowers are smaller and not so bright a yellow. They are borne in large heads, however, and, as they appear later than those of *A. saxatile*, and are produced more or less freely until late autumn, this *Alyssum* is worthy of a place in a good-sized garden, either in the border or rock garden. It is not a plant one can recommend as of the highest rank, even among the *Alyssums*. It may be raised from seeds, sown in the usual way in the open or under glass, and may also be increased by cuttings. *S. Arnott.*

SISYRINCHIUM.

SISYRINCHIUM bermudiana and *S. pachyrhizum* are two pretty, blue-flowering species, each suitable for planting on the rockery, where they quickly form dense bushes of grass-like foliage and numerous spikes of their extremely dainty, blue flowers. These plants grow less than twelve inches high. The former species comes from Bermuda, and the latter from Brazil. *W. Logan.*

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Cattleya labiata.—The majority of plants of this autumn-blooming *Cattleya* will have passed their flowering stage, and should still be kept moderately dry at the roots. This species and many of its hybrids produce thick, fleshy sheaths, and during periods of damp weather, an accumulation of moisture settles on the crown of the last made pseudo-bulb, sometimes bringing about decay of the flower sheath, and also the base of the leaf. As a preventive of damping, when removing the flower spikes, cut them close to the top of the pseudo-bulb, together with the flower sheath. If signs of disease are detected, a little powdered charcoal should be sprinkled over the affected part. Any necessary re-potting is best done so soon as new roots are perceived to be pushing from the base of the leading pseudo-bulb. Great care should be exercised when removing the plants from their pots not to damage the roots that adhere to the sides.

Cattleya Trianae and C. Percivaliana.—These Orchids will now be commencing to push up their flower spikes, and so soon as the flower buds are seen at the base of the sheaths, the plants should be afforded a small increase of water at the roots, and a few degrees more warmth.

Cattleya Lawrenceana.—This bright-flowered species is a somewhat difficult plant to keep in good health for any great length of time, as it usually makes its growth during the late autumn and winter. Its pseudo-bulbs will now be fully developed, and the plants should be kept on the dry side until the flower spikes appear, but on no account should any shrivelling be allowed.

Cattleya Warneri.—Plants of *Cattleya Warneri* that are growing actively should be grown in the lightest and warmest position in the house. The compost should be allowed to become dry between each application of water at the roots.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Shrubberies.—When renovations in the shrubberies are completed the pruning and thinning of various subjects are operations which may often be carried out during conditions which are unfavourable for ground work. Where summer pruning has been practised and the old wood cut out immediately after flowering, little remains to be done at this season, but some subjects grow so rampantly that a little thinning of the branches is often desirable, and this may be included in the present pruning operations. After the necessary overhead work is completed the surface soil should be lightly pricked over to imprison leaves that may have collected and prevent them from being blown away. Digging amongst shrubs is always a dangerous practice, as many of the surface-rooting plants lose a large proportion of their fibrous roots thereby, so that half the next growing season is necessary for their recovery. For the most part, the surface of shrubbery beds are a mass of fibrous roots, and if it is possible to apply a mulch of well-rotted material from the compost heaps, the occupants will greatly benefit, and the results of the treatment will be noticeable in that the yield of flowers will be richer and the foliage more luxuriant. When lack of material makes this impracticable, a dressing of a concentrated fertiliser and the working in of the fallen leaves are helpful.

General Remarks.—Cuttings of Roses and various trees and shrubs inserted earlier in the season, in nursery rows, should receive attention after every thaw; tread them back firmly in position. Lawns should be swept and rolled when weather conditions are favourable, and if bad patches exist they should be furnished with new turves. Cultivation of the surface, when this is sufficiently dry, should be carried out in preparation for giving the whole surface a top-dressing of rich compost. The construction of new paths and the renovation of existing worn ones, should be pushed on now while vegetation is resting. The tying and training of climbers on walls and buildings affords work for the staff when ground work is impossible, and in the training of deciduous subjects free use of the knife should be made where there is any tendency to overcrowding. Whenever the weather is favourable, beds which have been filled with spring-flowering plants should be cleared over and have the surface soil moved to break the crust caused by rainfall. Where bulbs are planted with other plants as a carpet, care should be exercised, as the growth of the bulb may be almost at the surface of the soil. Continue to collect leaves which have been blown together in outlying parts of the woodland, and store them for future use.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Pot Roses.—If a number of the pot Roses which were prepared for forcing, and have been plunged out-of-doors, or in cold frames, be now placed on a stage near to the roof-glass in a light house, they should respond readily to gentle forcing, following the recent spell of frosty weather. Very little fire-heat will be advisable or even necessary for a week or two, except to exclude frost. Later, artificial warmth may be applied with discretion, gradually increasing the amount as growth advances. Very careful ventilation of the house will be necessary to guard against attacks of mildew, for cold draughts are a frequent cause of this trouble. When growth is active, the plants should be fed with diluted liquid cow manure, and on the first appearance of flower buds a sprinkling of Clay's fertiliser on the surface of the pots, well watered in, will be beneficial. If from any cause the final pruning of pot Roses has not been done it should now be completed.

Coleus thyrsoides.—This plant is one of the most useful of winter-flowering subjects, and when timed to produce its bright blue flowers in January, a period when flowering plants generally are not over plentiful, it is much appreciated. The plant should now be growing in a temperature of about 55°, in as light a position as possible, not too far from the roof-glass, to prevent the spikes from becoming drawn. If the plants are fed occasionally with soot-water, the colour of their flowers will be intensified.

Azalea indica.—To augment the supply of decorative plants in the New Year, plants of the early varieties of *Azalea*, which are well-set with flower buds, may be placed in gentle warmth. Forcing should be very gradual. As a preventive against attacks of thrips, it will be well to syringe or dip the plant thoroughly in a nicotine insecticide.

Tulips for Forcing.—Whilst it is comparatively easy to produce good flowers of the early-blooming varieties of *Narcissi* and *Hyacinths* by Christmas and the New Year, the production of good Tulips at this season presents a little more difficulty. When forced early, the flowers are often so short-stemmed that their usefulness in decorations is limited. This defect may be remedied by placing the bulbs in a partially-darkened space in the forcing house. Darken this space by using strips of Hessian canvas placed over a light frame work of wood, with a light covering of fresh moss over the bulbs. The latter should be left in the enclosure until the flower stems have lengthened sufficiently and the flowers are showing colour, when they may be brought gradually into the full light.

Resting Bulbs and Corms.—Care should be taken that *Caladiums* are not exposed to an excessively low temperature at this time of year. All resting bulbs should be examined from time to time to guard against loss from drip, lack of sufficient air if stored in boxes, or possible ravages by mice and other vermin and insects.

Freesias.—Some of the earliest potted *Freesias* which have well-filled their pots with roots, may now be placed in a temperature of 55°. When subjected to a higher temperature at this season the plants produce only weak and puny flowers. A shelf near to the roof-glass is the best position for them. A little weak liquid manure should be afforded them, or a slight sprinkling of a plant fertiliser on the surface of the pots. Support the growths with neat sticks or twigs to keep them erect.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Fruit Borders and Plantations.—When the pruning and training of fruit trees are completed the ground should be cleared of all prunings, weeds and other rubbish and then dug, but not too deeply, or the surface roots may be damaged. Any part of the border or fruit plantation that is inclined to be sour, or on the heavy side, should receive a liberal dressing of lime, wood ash, horse droppings and decayed leaves, which should be dug into the top spit. The surface may be left a little on the rough side to allow the frost to pulverise it, and enable a fine tilth to be obtained in the spring. The frosty weather during November afforded a good opportunity for wheeling old compost and other fertilising materials amongst the fruit trees. Where trimmings of grass verges, wood ash, leaves that were not good enough for the making of hot-beds, and lawn mowings were collected in a heap, with a dressing of lime occasionally as it was collected, a supply of valuable material will be available for use when root-pruning or planting trees.

Birds and Fruit Buds.—From now onwards, according to the weather, the buds of Plums will begin to plump up, and a sharp watch should be kept that bullfinches do not damage them. This bird is naturally shy, but it will soon clear all the flower buds from Plum trees in winter, and also those of Apple trees in the spring. It is very difficult to prevent damage to standard trees, but Plums on walls may be easily protected with fish netting. The buds of Gooseberries, Red Currants and White Currants have a great attraction for the house sparrow as well as the bullfinch. A mixture of soot, lime, quassia extract and sufficient horticultural soft soap to make it workable through the syringe may be applied to these bushes as a deterrent to the birds. After heavy rain the bushes may require spraying again.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAM,
Wormley Bury, Broxbourne, Herts.

Late Grapes.—It will be advisable to make a weekly examination of all late Grapes with a view to removing all bad and damping berries. Maintain a temperature of 50°, and keep the atmosphere of the vinery dry. Remove all fallen leaves daily. I find it an excellent plan to shade the branches of black varieties of Grapes with sheets of brown paper, and white-skinned sorts with tissue paper. This keeps the berries fresher and in a plump condition. Vines still in bearing should have the remaining bunches cut and placed in bottles of soft water in the Grape room, and the house thrown open to the weather. Care must be taken during sharp frosts to protect the water pipes, either by emptying them or turning on the valves sufficiently to keep them warm. If the borders are dry, give them a copious watering, using tepid water. When fogs are prevalent keep the ventilators closed. In pruning the various

varieties reserve sufficient well-ripened shoots for propagating, taking care to select only the finest forms. Tie the shoots into small bundles, label them and plunge them outside.

Melons.—Where ripe Melons are required at the beginning of May, the seeds should be sown now. It is useless to attempt these very early crops without the aid of plenty of fire-heat, both top and bottom. Hero of Lockinge is undoubtedly one of the best varieties for this early crop. A hot-bed formed of three-parts leaves to one part litter should be prepared thoroughly by constant turnings. Make the bed as solid as possible by ramming, and allow it time to settle before arranging the mound of soil for planting. The soil should be in position several days before planting to allow it to become thoroughly warmed through.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

Lettuce.—Sow a small pinch of seed of an early-maturing variety of Cabbage Lettuce in a box in heat. The seeds will germinate quickly, and so soon as the seedlings are large enough they should be pricked off into boxes at a sufficient distance apart to allow them to mature. They may be grown on a shelf near the roof-glass in a warm house.

Broad Beans.—The plants of the late autumn sowing of Broad Beans should have the soil drawn up to them. This will give them a little protection.

Peas.—A sowing of a dwarf variety of Peas may now be made in pots, and also in a heated pit.

Wood Ash.—Ash from the garden fire is most valuable as it contains a large amount of potash. Large quantities of prunings and woody rubbish are burned during the winter in gardens, and when the ash is cool it should be carefully preserved in a dry place. More than half the wood ash that might be saved as a fertiliser is wasted because it is spoiled by rain before it is stored. Wood ash may be used with very beneficial results to practically all root vegetable crops.

Cucumbers.—Sow seeds of Cucumbers in small sixty-sized pots for early spring supplies. Sow the seeds singly, and plunge the pots in fibre in a box or case in the stove. Great care must be taken at this time of the year that the seedlings do not receive a check from cold or through watering them with cold water.

French Beans.—Sow successional batches of French Beans in pots. The earlier plants should be top-dressed and staked so soon as the shoots need supports. Use the water pot very carefully for the next two or three months. The trimmings of the top of Pea sticks will be useful for staking Beans in pots.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

Hardy Fuchsias.—These plants, in exposed and inland districts, are cut back by frost each winter, but notwithstanding this, they make new, vigorous growths each year which flower well in autumn. In districts where low temperatures of long duration occur, protection may be given the plants by placing dried Bracken or broken straw litter over them, until the young shoots show about the base of the plants. *F. corallina*, *F. gracilis* and *F. Riccartonii* are three kinds suitable for growing in northern gardens, and protected each winter as suggested, they will give a brilliant display of colour. *F. procumbens* and *F. pumila* may be planted on the rockery, and should be given similar protection. All hardy Fuchsias are easily propagated; they may be increased from cuttings in the autumn, using half-ripened wood, or in spring from young shoots taken from plants that have been lifted and introduced to slight heat.

Hamamelis arborea.—This winter-flowering shrub is bright with its yellow flowers. Planted in groups of from three to five plants in the shrubbery, it gives a pleasing effect; it also lends itself to wall training. It is perfectly hardy and thrives in any good soil. Its flowering period is from December to February.

Preparation of Ground for Potatoes.—In order to grow good Potatoes year after year in a kitchen garden of a somewhat restricted area, the plot selected should be specially prepared. This is very important if the soil is of a heavy nature and the present is the most suitable time for the work. Select, for preference, ground that was well-manured and dug deeply last year, and this time, instead of using farm-yard manure, dig in a liberal quantity of leaf-soil taken from a heap that was garnered the previous year. Turn over the ground to the depth of the spade and leave the surface as rough as possible. In the spring, after the Potato sets have been planted, a dressing of well-slaked shell lime should be applied to the surface of the ground.

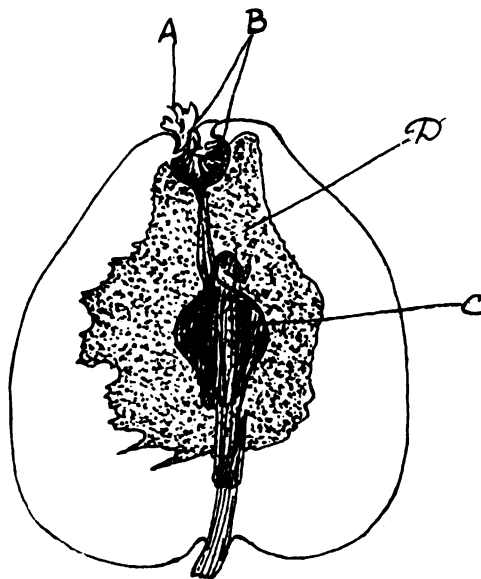


FIG. 198.—CORE ROT OF APPLES.

A., remains of petals; B., remains of calyx; C., core cavity; D., rotten tissue.

Stored Root Crops.—It will be advisable to examine the various root crops in clamps or otherwise stored, on the first available opportunity, as the recent severe weather may have done slight damage to them. Remove any that are injured, then replace the coverings.

ROSE GARDEN.

NEW FRENCH ROSES.

REGISTRATIONS submitted by the International Bureau of Registration of Horticultural Novelties connected with the Fédération Horticole Professionnelle Internationale, include the following Roses, registered in November, 1925, by Louis Walter, Esq., of Saverne Rose Nurseries, France.

CECILE VERLET, H.T.—A very strong-growing variety, two feet in height. The flowers are yellow, turning to pink; plant for clusters.

MADELEINE SELTZER.—A strong-growing and prolific climbing variety, similar to Tausendschon. The shoots are very thorny. The flowers are yellow, turning to light yellow.

MME. MILLERAND.—A hybrid Tea variety, similar to Pharisæer; the outside of the petals is red; the bloom is full.

GENERAL BERTHELOT.—A hybrid Tea variety with long buds that open well, forming a good flower; the colour is dark red; height, two feet.

GENERAL DE VAULGRENAUT.—A very vigorous grower (six feet), with good foliage and large pink flowers. The plant is in flower continuously.

A CORE ROT OF APPLES.

At the Royal Horticultural Society's Gardens, Wisley, towards the end of July last, Mr. Fox Wilson, entomologist, and Mr. Brown, Trials Officer, drew my attention to the condition of the fruit of White Transparent, one of the earliest Apples in ripening.

Many of these had fallen to the ground and those remaining on the trees appeared, by their colour to be ripe.

On some of the fallen fruits a small brown patch was present, either surrounding the insertion of the stalk, or at the opposite end round the eye. When cut through eye and stalk longitudinally the core was found to be soft, brown in colour, and rotten.

Apples which had no visible mark upon them were found to be in the same condition when cut open, and on the tree itself some of the ripest-looking fruits were found to be affected in a similar manner.

The rotten condition of the internal tissues involved not only the core but always that portion between the core and the bottom of the eye, extending as far as and often including the skin.

If the skin was affected a corresponding brown patch was visible on the outer surface, but if the skin was still sound no external sign was apparent (see Fig. 198).

In those fruits marked at the stalk end, the rotten tissue extended from just beneath the bottom, but not including the skin, of the eye, through the core and down to the basal portion of the fruit involving the skin.

In most of the Apples the pips, though fully formed, were soft and rotten, and a certain amount of white mycelium was present in the core cavity of many.

Searching the orchard for other varieties which might be affected in a similar manner it was found that Domino, Langley Pippin and Duchess of Oldenberg had dropped much of their fruit, which was apparently ripe. When examined and cut open most of these fallen fruits were found to contain a smaller "core rot."

Microscopic examination of the brown rotten tissue taken from many Apples revealed the presence of a copious mycelium in every one, and in a few, bacteria in addition.

The mycelium was isolated and grown in pure culture on various nutrient media, and eventually turned out to be that of the brown-rot fungus, *Sclerotinia fructigena* (*Monilia fructigena*).

Characteristic pustules of the well-known brown-rot fungus subsequently developed on every diseased Apple which had been cut open for examination and kept in the laboratory.

The fungus isolated from diseased tissue, and that which formed spore pustules on diseased Apples was carefully compared with undoubted *Sclerotinia fructigena* which was then becoming plentiful on damaged Apples in the orchard.

The comparison revealed no distinction between the two. Furthermore, inoculations with the isolated fungus into sound Apples produced typical brown-rot.

In the course of the investigation it was found that the spores of the brown-rot fungus will not germinate in water alone; a small amount of organic matter must be present for germination to take place. Thus, if a little Apple juice was added to a watch glass containing water, spores placed in such a liquid would commence to put forth germ tubes an hour to an hour-and-a-half afterwards.

That the rotten tissue within the Apple is permeated with the mycelium of *Sclerotinia fructigena* there can be no doubt, but whether this fungus alone is responsible for the condition in which the Apples were found is not quite certain. In any case, it is an unusual form of rot associated with the brown-rot fungus and accompanied by a premature falling of the fruit.

From the observations made so far, it seems extremely likely that the fungus gained entry to the interior of the Apples by way of the eye, though when this happened, and exactly how, is by no

means clear. *Sclerotinia fructigena* will only invade healthy tissue after the spores of the fungus have been introduced into a wound: no invasion takes place unless the skin has first of all been broken in some way so as to expose the underlying tissue. When this is once done, infection follows very soon afterwards. It is possible that the Apples may have been attacked at an early stage of development, or even in the flowering stage, in the same way that the blossom-wilt fungus, *Sclerotinia cinerea*, infects and kills the flowers of both Apples and Plum. The immature fruits of the Plum are also attacked by this fungus.

It is hoped that further light will be thrown upon this interesting disease next year.

Besides Wisley (Surrey), a similar rot and fall of fruit was reported from an orchard in the same district, and at a recent meeting of the British Mycological Society, when a paper on this subject was read, it was ascertained that a similar trouble had been experienced in Essex. W. J. Dowson, Wisley.

TREES AND SHRUBS.

RHODODENDRON ORTHOCLADUM.

THE small-leaved *Rhododendron orthocladum* (the subject of the Supplementary Plate presented with this issue) was discovered by Mr. George Forrest in 1913, on the mountains in the Yangtze bend, Yunnan, China, at an altitude of 11,000 to 12,000 feet. The collector's number is 10,481 Forrest. The species belongs to the *Lapponicum* series. The name *orthocladum*—with straight twigs—refers to the stiff compact and upright habit of the bushes, which are from two feet to four feet tall.

The young shoots are densely scurfy, and the twigs are golden brown. The small, narrowly-oblong, or lanceolate leaves are one-third to three-quarters-of-an-inch long, and one-tenth to one-quarter-of-an-inch wide, scaly above—on some plants giving a grey or silvery green effect—and furnished with glistening, yellowish scales beneath.

The five-lobed, lavender flowers, which vary a little in the shade of colour on different plants, are borne in clusters of two to four at the ends of the twigs, and are about an inch wide.

R. orthocladum is a very pretty and distinct *Rhododendron*, a useful acquisition to group along the front of a pleasure ground bed or shrubby border, where it would not be overrun by stronger neighbours. It is suitable also for the rock garden, being formal and compact in growth. The plants flower and produce seeds freely, the latter providing a ready means of increase. Cuttings made of the young growths, towards the end of July and early August, root freely in sandy peat under a bell-glass if given similar treatment to that generally accorded to Heaths. A. O.

DECAISNEA FARGESII.

Two species of the genus *Decaisnea*, which is included in the Natural Order *Berberidaceae*, are figured in the *Botanical Magazine*. *D. insignis*, t. 6,731 and *D. Fargesii* t. 7,843.

D. Fargesii, the subject of the illustration in Fig. 197, is a native of the mountains of Western China, and was first introduced in 1895, by Père Farges, a French missionary in China, who forwarded seeds to France. Small plants were received at Kew from M. Maurice de Vilmorin in 1897. In habit, *Decaisnea Fargesii* is a very distinct, deciduous shrub, producing several stems of upright growth from about eight feet to twelve feet tall. In summer the branches are clothed with attractive, pinnate leaves, two feet to three feet in length, composed of thirteen to twenty-five leaflets, the largest of which are six inches long. The flowers are greenish-yellow, with long, narrow petals (more interesting than showy), borne on slender, waving panicles, sometimes so much as eighteen inches in length, which terminate the new growths towards the end of June. The flowers are

followed by cylindrical fruits which somewhat resemble a sausage in shape. They are borne in clusters and are powder-blue in colour, each about three inches long and three-quarters-of-an-inch in diameter. Inside the fruits are the black seeds, imbedded in a mucilaginous substance. The seeds produce a ready means of increase, as fruits are produced fairly regularly. The plants thrive in a well-drained, loamy compost, tending to a light rather than a heavy character. Incorporate decayed leaf-mould in the ground when planting, and a little peat if available. As the young growths are liable to damage by late spring frosts, select positions for planting sheltered from the north and east.

Decaisnea insignis is a native of the Himalayas. The material for the *Botanical Magazine* figure was obtained from a plant which flowered in the Temperate House at Kew, in 1884, thus suggesting that the protection of a greenhouse is necessary for its successful cultivation. A. Osborn.

KALMIA LATIFOLIA.

KALMIA latifolia, the Mountain Laurel or Calico Bush, is one of the most decorative of flowering shrubs, and is in bloom from May onwards, bearing dense clusters of wax-like, pinkish-white, cup-shaped flowers in abundance. The large, dark green, evergreen foliage is a great attraction.

This plant grows best in a cool, damp, peaty soil, or in positions where Azaleas and *Rhododendrons* flourish.

BERBERIDOPSIS CORALLINA.

THIS twining, evergreen shrub, introduced from Valdivia in 1862, is interesting, inasmuch as it is the only member of its genus. It is, however, a subject of no small account as an ornamental wall plant, its only defect being its tenderness. Even so, *B. corallina* will withstand more frost than is often supposed. Growing on a north wall, with no protection whatsoever, our specimen (now some ten or twelve years old) has withstood up to 20° of frost without a leaf being injured.

The plant is now about eight feet tall. The ovate leaves are a glaucous green, tough, horny and slightly spined, and not unlike those of *Berberis Aquifolium*. The flowers appear in bold clusters about midsummer, each at the end of a two inch, drooping stalk; they are globular, half-an-inch across, and composed of a large number of incurved, fleshy segments, all of which, including the stalk, are a rich Fuchsia-red. The flowering season lasts for at least two months. *B. corallina* appears to thrive best in a freely-drained loam which does not get dry and hot in summer. Leaf-mould may be added where the medium is too lean and sandy. J. N., Wales.

HARDY FLOWER BORDER.

WHITE-FLOWERED LINUMS.

AMONG the comparatively few *Linums* which have white, or nearly white, flowers, there are one or two of outstanding merit. One of these is *L. monogynum*, a New Zealand species, yet perfectly hardy, adaptable and vigorous in constitution. This handsome Flax makes a somewhat dense, bushy tuft, a foot or more in height, of slender, elegant stems. These are closely furnished with narrow, glaucous leaves, and terminate in a head of pure white flowers, each nearly one inch across.

L. monogynum is not only an easy plant to cultivate in almost any average soil and situation (full sun being preferable), but the very charming flowers are produced in unbroken succession the season through. Moreover, seeds are freely produced, and these provide a ready means of increase. We always sow seeds in the open ground in the late spring, and plants thus raised will commence flowering the following season.

L. salsoloides (of the lists) is another white

Flax of exceptional charm. It also sends up a loose sheaf of finely-drawn stems from a single crown, and these, more sparsely-leaved than those of the foregoing, are adorned throughout the greater part of the summer with blossoms of a delicate, pearly whiteness, often darkening into a pale shade of purple at the centre. Though a native of the Mediterranean region, *L. salsoloides* is quite reasonably hardy, but it should be grown in a warm, even hot, situation, and a free soil. Here we have found it long-lived and in every sense satisfactory in the poorest of stony ground which gets very dry in summer. There are several forms of this beautiful Flax, including a pretty dwarf, or prostrate, one. *L. salsoloides* is now classed as a sub-variety, or form, of *L. tenuifolium*.

In some of its various departures from the type, *L. viscosum* is as white as the foregoing. Though also from Southern Europe this species is perfectly hardy, but quite unlike most of its kindred, it is not a sun-lover. In these gardens it does well in a rather cool, but freely-drained, mixed border, and there, on the shady side of a taller plant, it spreads its curious Plantain-like rosette of broad, tough leaves, and sends up a flowering stem of about a foot long. These stems—there may be more than one to a plant—are often branched, and they bear a few large and conspicuous blossoms of a very pale bluish or pure white, with a scarcely perceptible wash of lavender-blue.

Many of the blue *Linums* vary to white, and of these we have found *L. perenne*, whether it is in white, the rarer pink, or the typical blue, an excellent rock garden plant for use where a subject casting a light shade for the benefit of something else is desired. *L. perenne* is, moreover, in itself the very essence of elegance and airy grace. A. Johnson, Ro Wen, Tal-y-cafn, N. Wales.

BULB GARDEN.

GALANTHUS BYZANTINUS VAR.

NOVEMBER.

IN your report on page 417 of the meeting of the Royal Horticultural Society, on November 17, you give a description of the above Snowdrop, shown by C. T. Musgrave, Esq. The plant would appear to be an interesting variety of *G. byzantinus*, should it prove to belong to that hybrid or species, as I believe a November-flowering variety has not previously been recorded. It is not mentioned if the plants shown had plicate leaves, after the fashion of those of *G. plicatus*, or if they were similar to those of *G. Elwesii*, the other reputed parent.

I have been specially interested in *G. byzantinus*, bulbs of which I received from one of its native habitats twenty years or more ago. My specimens were a most miscellaneous lot, and the plants were unmistakably, I considered, hybrids between *G. plicatus* and *G. Elwesii*. This was particularly marked in the foliage. Most of the plants had more or less plicate foliage, but a small proportion had the plain leaves of *G. Elwesii*. Some of the blooms had the crisped segments of *G. Elwesii*, but others had a similar character to those of *G. plicatus*. Only a few of the bulbs gave really fine flowers and numbers were not worth retaining. In no case, however, did any of the plants flower until the spring. Unfortunately, when I sold my house, I had to leave my bulbs of *G. byzantinus* behind. It would be exceedingly interesting to know the source of Mr. Musgrave's bulbs. Mine came from the Asiatic coast of the Dardanelles, or close by, and the only autumn-flowering Snowdrops of which we have a record came from Greece, Albania, Chios and some few of the Mediterranean islands. Not many of these are of much real permanent value in our climate as they have a tendency to fall into line with others and flower in the early part of the year. S. Arnott.

FLORISTS' FLOWERS.

THE VIOLA.

PLANTS of *Violas* raised from cuttings and growing in cold frames should be examined, decaying foliage and weeds being removed. The soil around them should be firm but the surface may be stirred lightly. The plants should be grown as hardy as possible. A close, damp atmosphere during the winter is inimical to the plants, but ample protection should be afforded them during periods of severe frost. Efforts should be made to produce plants of low-growing, spreading and tufted habit. As growth advances certain varieties may need stopping, and the first flower buds may be removed.

Early planting in their permanent quarters is advisable. The plants will commence to flower in May and, provided all dead flowers are removed, will continue to make a good display throughout the season.

As carpet plants and edgings, *Violas* have become almost indispensable in gardens. Attractive beds on a paved terrace were formed by planting shapely pyramids of Myrtle, carpeted with the *Viola* Maggie Mott. There are many varieties of bedding *Violas* which are free-flowering when grown in a rich, deep, cool compost. *Violas* suitable to the rock garden while not possessing the merits of such continuous flowering as the bedding varieties, are very interesting, and some of them are very free-flowering. *Viola cornuta* is a Pyrenean species, with pale mauve flowers, growing and flowering freely. There is also a deep purple form of the above known as *V. purpurea*.

V. elatior is a distinct, erect-growing plant, producing large flowers of white and pale mauve in June. The Grecian species, *V. gracilis*, is well-known. There are several good varieties of the last. Lady Crisp has flowers of clear lavender blue. Mrs. Bowles is a rich purple sort with large flowers. The yellow form, Golden Wave, is distinct; *V. Undine* resembles the members of the *V. gracilis* family; it is very free-blooming, and its flowers are violet-blue. *Viola biflora* is a very dwarf species which requires a cool position. The flowers are yellow with black markings. Under suitable conditions, flowers are produced by this plant throughout the summer. *Violas* are increased by means of cuttings, division, and from seeds. C. Ruse.

ORCHID NOTES AND GLEANINGS.

ORCHIS ROTUNDIFOLIA.

THIS dainty little Fly-spotted Orchid is a native of the northern United States, extending throughout the whole of Canada into the Arctic regions so far as Greenland, so there is no question as to its ability to withstand the most severe frost. It is found in peat bogs and swamps, and grows to the greatest perfection where the ground is saturated with moisture, together with full exposure to the sun's rays. From roots composed of brittle, fleshy fibres, spring single, rounded, stemless leaves of a full green colour. The base of the leaf is protected by a few sheathing, brownish scales. Each growth produces a single flower spike (Fig. 199) of from two to ten pale pink flowers, each with a large, flat, projecting lip, divided into three lobes, pale pink in ground colour, spotted with rose-purple. The hooded petal, bent down over the column, is also pale pink, with rose-purple spots. Sepals spreading and unspotted. The blossoms are slightly fragrant.

The successful cultivation of most members of the genus *Orchis* is difficult, especially those with thick, fibrous roots. The best chance of success with the present species is to plant it in a fully exposed, but low part of the rock garden, in a mixture of peat, a little leaf-soil and *Sphagnum*-moss, kept very moist. A

little charcoal should be added to the compost to keep it sweet. *O. rotundifolia* is perfectly suited to cultivation in the cold greenhouse in a double pan, the space between the two pans being packed with *Sphagnum*-moss, kept moist. Similar compost to that advised for the open ground is suitable for its culture in pans. A. W. D.

over eight inches across, with petals three inches wide. The sepals are blush-white, the petals blush rose with a distinct white midrib. The broad, spreading lip is ruby-purple with darker veining and white tube, the side lobes being crimped and coloured on their faces like the front.

The other, *Laelio-Cattleya Locarno*, was

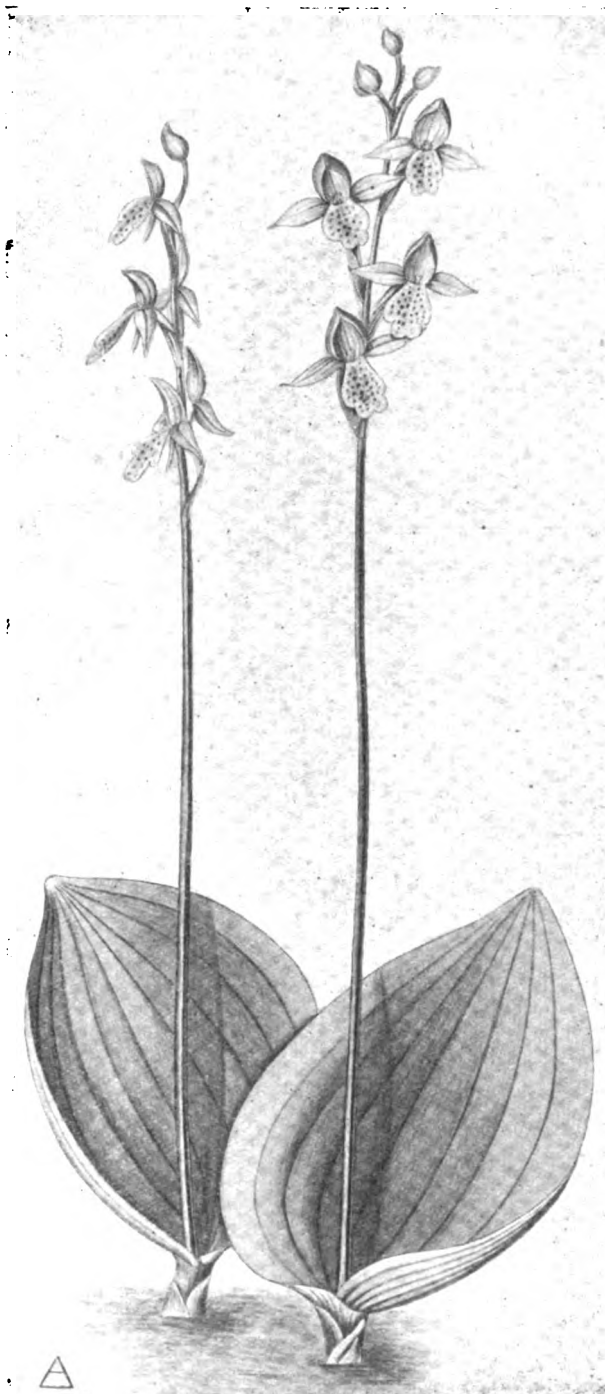


FIG. 199.—ORCHIS ROTUNDIFOLIA.

TWO NEW LAELIO-CATTELEYAS.

MESSES. STUART LOW AND CO., Bush Hill Park, Enfield, and Jarvisbrook, Sussex, send grand flowers of their two latest novelties.

The one named *Laelio-Cattleya Illustris* was raised between *L.C. Lustre plumosa* and *C. Mendelii ardens*. It is a superb flower,

produced by crossing *Laelio-Cattleya Soulangae* and *C. Tityus*, thus embodying most of the showiest *Cattleyas* with *L.C. Lustre*. The fine, broad flower has rosy-mauve sepals and petals. The well-displayed, heavily crimped lip is purplish-crimson in front, the disc being yellow, with some dark lines at the base. It is a very remarkable and showy hybrid and shows a great advance in its section.

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Editors and Publisher.—Our correspondents would obviate delay in obtaining answers to their communications, and save us much time and trouble, if they would kindly observe the notice printed weekly to the effect that all letters relating to financial matters and to advertisements should be addressed to the PUBLISHER; and that all communications intended for publication or referring to the literary department, and all plants to be named should be directed to the EDITORS. The two departments, Publishing and Editorial, are distinct, and much unnecessary delay and confusion arise when letters are misdirected.

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be written on ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

MR. F. KINGDON WARD'S EIGHTH EXPEDITION IN ASIA.* XXII.—TO THE FALLS OF THE TSANGPO.

THE first day's march offered no serious obstacle, and after crossing two glacier torrents, we camped in the river bed, having made fair progress. On November 23, however, keeping as close as possible to the river, we were confronted by an awkward cliff and traverse. Presently we came to a far more formidable cliff, split by a "chimney" forty feet high. The leading coolies climbed the outer buttress of this chimney like cats, and then proceeded to fell trees, which were notched into the semblance of ladders, and let down the chimney by means of a rope. When these were fixed in position we ascended with the help of the rope, and the loads were hauled or carried up. This chimney held us up for nearly two hours.

Meanwhile, I botanised, finding a dwarf 'Maddenii' Rhododendron, which flowers at the age of three or four years, when not above eighteen inches high, though judging by the size of the capsule, the flowers must be large. Nowhere common, this species turned up again on the southern flank of the Himalaya, much further west in the province of Mönkyul, nearly three months later. It is a plant of the middle Conifer forest, occurring on boulders, or fallen logs, or high up on trees, at an altitude of about 9,000 feet. Another interesting plant was a large climbing Rose which raised itself to a height of forty feet sometimes, and bore opulent umbels of smooth, globular, apple-yellow hips. Already we were coming down to a new stratum of vegetation, and there appeared a splendid weeping Pine, upwards of 150 feet high, whose tresses had a wonderful silvery-blue sheen and bore large pendent cones. I saw, too, for the first time, Ilex trees scarlet with berries, and cones on the Tsuga trees. Several trees, such as the Tsuga, appear to maintain a celibate existence in the Tsangpo valley beyond the limits within which they are able to produce flowers and fruit.

The tree Rhododendrons, on the other hand, no matter where they grow, seem to have alternating lean and fat years, all of one species over a large area flowering either freely or not at all, according to the season. I have already referred to the big-leaved 'Grande' of Pemako, and even in the gorge this tree was almost entirely devoid of fruit, though I found one or two exceptions. Another 'Grande' was in the same state, and above a certain point so, too, was the 'Arboreum,' though crowded now with flower buds. The 'Irroratum' on the other hand, had had a wonderful season, and was everywhere laden with fruit. As the flower buds are laid down complete in the previous year, it is evidently not the current but the previous year by which they must be judged—1924 was a very wet season, and to judge by the buds on the Rhododendrons, the latter had thoroughly enjoyed it, and would bloom freely in 1925.

On November 24, we were again delayed, this time by a steep, smooth cliff which we had to descend in order to regain the river bed. Immediately after we had to scale another cliff to get out of the river bed. The silver-blue Pine was now a feature of the forest, which grew richer in species each day, but was still predominantly of the Conifer-Rhododendron, evergreen type. There were deciduous trees, too, Birch, Alder, Maple, and presently a splendid Magnolia, whose leaves often measure fourteen inches by eight inches. Conspicuous also was an evergreen Oak, a hoary giant whose bark scales in flakes like that of the Plane, though without leaving quite such a piebald effect; I measured one eighteen feet in girth, six feet from the ground.

On November 27, owing to various delays, we made little progress, camping at the top of a cliff, which dropped a thousand feet sheer to the river. This cliff was forested with the weeping Pine, mingled with an occasional Juniper. Only where the slope was gentle and inclined to be boggy did Alder copse prevail amidst a wilderness of bushes and virulent stinging Nettles. Rarer still was it to see an occasional grassy slope, though such occurred where a steep face caught the mid-day sun. The precipices, wherever they faced north or east, were always clad with bushes of Rhododendron.

Each day the scenery grew wilder, the river more violent. On either side the cliffs now rose for 3,000 feet at angles approaching the vertical. For the most part we were ever searching for a way up and down the cliffs, though occasionally we were able to proceed over a frightful chaos of boulders in the river bed itself. The rope proved indispensable, and the leading coolies, armed with axes and knives, were invaluable. Unfortunately, we had no spare coolies to attend to the path only, and were compelled to relay the loads up behind while the pioneer battalion was at work in front hacking a path.

November 29 was our last march by the river, and we bivouaced, as usual, amongst the boulders. We saw many interesting trees and shrubs, marking the approach to a different flora; amongst them a curious little, gnarled, tree Rhododendron, with very stiff, leathery leaves, and a dwarf, almost creeping, Berberis, with large, translucent, red berries. We cut our way through solid thickets of mixed Rhododendron, and bushy Ericaceae, amongst which grew a variety of shrubs—dwarf Birch, Buddleias with thick, flannelly leaves, Elaeagnus, Deutzia, Hydrangea, Cotoneaster, etc. By evening we had reached the foot of a great spur whose almost vertical face was silver-striped with a flight of cascades. The gorge here narrowed, and the river, swinging round, turned half-way back on itself and suddenly crashed over a cliff about forty feet high, filling the gorge with thunder and raising clouds of spray. This was the first fall, and at this point we had to leave the river. On the morrow we scaled the cliff following a Takin track, to a height of 1,500 or 2,000 feet above the river. There were some very nasty places, and without the rope we never should have got up. As it was, it took us the whole day to reach the stony glen above, and there we had to bivouac on the steep

hillside. I need not dwell on that miserable night, spent in pouring rain, huddled on the khud, without even a tree to shelter us.

At the lower edge of the forest, which stretched upwards to the eternal snow, were Pinus, Tsuga, the copper-coloured 'Thomsonii' Rhododendron, and other trees; I also noticed an Ash. On the following day we again climbed very steeply, but now were in forest. The trees were all of great size, chiefly Tsuga, 'Grande' Rhododendron, and, still higher, Abies; there were as usual, in these wet forests, many small epiphytic Rhododendrons also. At last we reached the ridge at a height of nearly 4,000 feet above the river at the point where we left it, and thus some 10,500 feet above sea level—no great height, certainly, yet we were on the verge of the alpine region. Descending a short distance down the other side we camped again in the forest where I collected seeds of the Abies which has very large, gun-metal blue cones.

A long descent, growing ever steeper and steeper, brought us back to the river on December 2, and to the first Mönba village. Here everything was different, especially the vegetation. It was sub-tropical. It was Indo-Malayan. Certainly it was not Sino-Himalayan. But there were Rhododendrons still in the forests. A bush—it did not look much like a Rhododendron, really, but there were the capsules, small, in threes. A tall, slim 'Maddenii,' with a copper-red stem and large leaves, nearly as large as those of R. Nuttalli. Another bush, stiff and compact, with harsh, leathery leaves; and seeds of all three were collected. Later, I saw the two latter in flower, the 'Maddenii' with splendid white flowers, like Madonna Lilies, exuding fragrance, the leather-leaved one with pale pink flowers. The 'Maddenii' grows in the forest, reaching a height of twelve or fifteen feet, but always slim and graceful; the other keeps to the open screes, boldly facing the sun, growing in the poorest, roughest soil. One may see flowers and ripe capsules together on the 'Maddenii,' the latter taking nearly a year to mature.

In the forest there were Oaks and Ficus, Viburnum, Acacia, Bucklandia, Dalbergia, and large-leaved Araliaceae. Numerous Orchids, some in flower, clothed the rocks and trees. There was Moss everywhere, Moss and Ferns; a Cucurbita, dangling spherical fruits, bright scarlet and as large as Tangerines; a Clematis with purple and cream flowers; Actinidia, vines, and other climbing plants added variety. In the undergrowth a species of Skimmia displayed rosy berries, a Strobilanthes was in bloom, and swelling mounds of the ever lovely Luculia gratissima. Then there were Bamboos, Bananas and Aeschynanthus—in fact, the flora of the upper Irrawaddy. Hemp, Maize, Millet, Castor Oil Plant, Capsicum, and Oranges are grown round the villages. In the spring, Barley is grown; in autumn, Buckwheat.

Slopes facing due south were clothed, not with sub-tropical forest but with grass, Bracken, tall Anemone and other plants, amongst which ramped a fine Crawfordia. The only trees were scattered Pines and Alders—an association common enough on the north-east frontier of Burma.

From this village it took us two days to reach the rope bridge (Fig. 200) over the Tsangpo, which we must needs cross; and three or four days were spent at the confluence of the Kongbo Tsangpo with its great tributary, the Po-Tsangpo, which flows down from the north, while we searched for a route up the gorge to the point where we had been obliged to quit it.

The weather, though not settled, was much better, and we had a number of brilliantly fine days, with magnificent views of the giant snows which hemmed us in (Fig. 201). But when at last we started on the last hope (December 12), another storm began. It was impossible to follow the river, and our plan was to climb right up to the top of a huge spur, and from there descend to the river again, or at least see it. The climb on December 12 and 13 took us through forests of magnificent trees, Magnolia, Oak, Birch and Maple below; Tsuga and 'Grande' Rhododendron above. With regard to this Tsuga, it may be mentioned that in 1898 there was a big

* The previous articles by Mr. Kingdon Ward were published in our issues of April 12, May 17, June 21, August 9, August 30, September 27, November 1, 1924, April 4, May 9, June 6, June 20, July 4, July 18, August 1, August 15, September 5, September 19, October 10, October 24, November 21, and December 5, 1925.

flood in Assam, following which, two or three years ago, on various islands in the Dihang river (Tsangpo), covered by the flood, some large tree trunks were discovered. Though these had been buried in forest and sand for twenty-two years, and were covered with moss, the wood was in perfect preservation; and the logs, some of which were twelve feet in girth, were sawn up and used for bridge building.

Great efforts were made to locate the origin of such valuable timber, and the foothills of the Assam frontier were searched, but in vain. All that was known was that the timber was that of some Conifer. It seems likely that it was, in fact, this Teuga, the largest forest tree we came across.

During our five-day trip it rained by day and snowed by night; it seemed we should never reach the gorge, let alone see the river in such

GENTIANA SINO-ORNATA.

I SHOULD like to put on record the very fine performance that *Gentiana sino-ornata* has recently given here at Stevenage. I planted out a fair sized bed of it last spring—a specially prepared bed of peaty leaf-mould, about a foot deep, and roughly and irregularly nine or ten feet long by some six or eight feet wide and containing a hundred or so plants. During the early part of the summer we took a large number of cuttings from these plants, so that they have not flowered so freely as they would otherwise have done, but nevertheless we have had a wonderful show of blossom. The display began in September, just too late, alas! for the Holland Park show, but very soon

wide and brilliant, and now, on Monday, December 7, they are still fresh and lovely, arranged in a shallow dish of moss—looking as though they were growing—and this, bye-the-bye, is the best and only way to arrange flowers of *Gentiana sino-ornata*, *G. acaulis*, *G. verna*, *G. Farreri* or any of the short-stemmed species. Use a shallow dish filled with moss and water, and then set the short stalks in the moss. Failing moss, one may use a cushion of some mossy Saxifrage or any other plant of like habit, but moss is best.

The flowers of *Gentiana sino-ornata* are about the size of those of the old *Gentiana acaulis*, and I think the blue is quite as clear and pure and brilliant as that of *G. acaulis*. But *G. acaulis* flowers in May, and *G. sino-ornata* now, and it is difficult to compare the two accurately at such a distance of time. I have

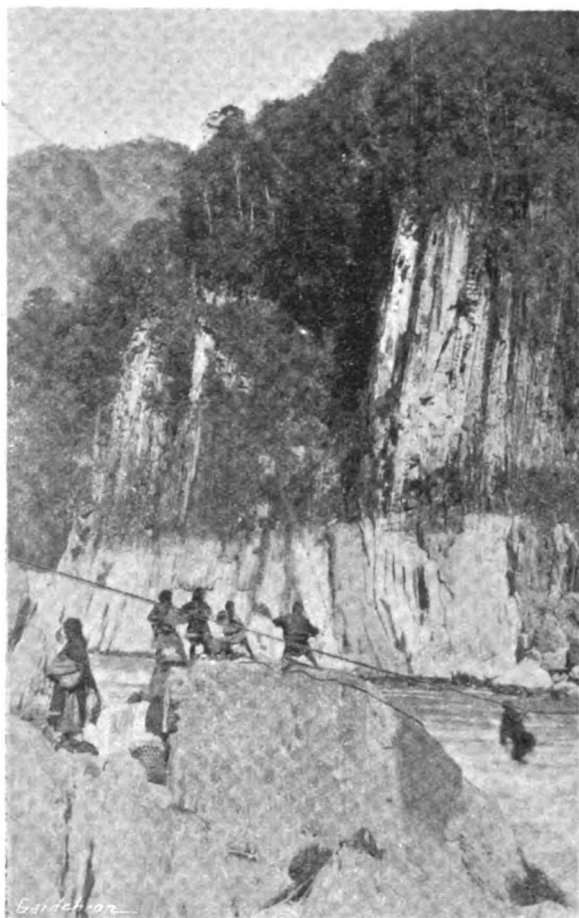


FIG. 200. CROSSING THE TSANGPO GORGE BY A ROPE BRIDGE.



FIG. 201. TSUGA FOREST OF THE TSANGPO.

weather. However, on the afternoon of December 13, we reached the summit of the spur, and saw, 4,000 feet below, a good stretch of the river. Descending 2,000 feet, we made a very uncomfortable bivouac on the slope, and got very wet in the night. Next day I descended 2,000 feet to the river and found another and bigger waterfall, returning to camp at night too exhausted even to sleep. The weather improved next day, and we recrossed the ridge, camping in comfort under a huge boulder.

December 16 was a lovely day, the sun glittering on the snow-covered forest, and we got back to our village in the warm valley, pleased with the results of our trip. I had got seeds of the big-leaved 'Grande' at last, having found two trees covered with its large fruits; we also secured seeds of the big Magnolia, of the Tsuga, some additional seeds of several epiphytic Rhododendrons, and of the small 'Maddeni.' Best of all, we had found the biggest of the Tsangpo falls! *F. Kingdon Ward.*

after that they began to be a really lovely and wonderful sight. I have picked large quantities of the blossoms to give away, and took about a hundred blooms to the Royal Horticultural Society's show on November 3. In spite of the recent severe weather, rain, snow, frost and several days of skating, not to mention fog, the plants are still flowering profusely and gallantly, fully exposed in their open bed, and without shelter or protection of any kind.

On Saturday, December 5, I picked some four dozen blooms, some to send to a great lover of alpine flowers who had gone to Switzerland, and the rest to enjoy myself indoors. When I gathered them their recumbent stems were frozen to the ground, and the plants were completely muffled up in a thick, heavy rime of hoar frost. The blossoms were closed, and so thick was the hoar frost that covered them that it was impossible to tell for certain which were immature buds and which fully developed flowers. Ten minutes in a warm room thawed them out, and caused them to open their petals

had *G. acaulis* flowering side by side with *G. sino-ornata*, but the late autumn flowers that *G. acaulis* often produces never have the brilliance of those of May, and they do not compare well with normal flowers of *G. sino-ornata*. *G. sino-ornata*, moreover, has the added beauty of wonderful striping on the outside of the corolla tube: lovely longitudinal markings of dull sapphire, old ivory white and almost amythest, in fine contrast with the brilliant, open, mouth of the trumpet.

As to the culture of this superb plant, there need be no difficulty. There are gardens, or districts, in which it will flourish in the natural loam. But this is always, I think, in places where Rhododendrons and Heaths flourish naturally. In stiffer, more clayey loams, such as Roses enjoy, it is not always a success. I tried it here in Stevenage loam, which is stiff and yellow, and it failed utterly. At Edinburgh Botanic Garden, on the contrary, they grew *Gentiana sino-ornata* as a carpet under the Roses. But where, as at Stevenage, the natural loam

of the district does not suit the plant, then all one need do is to dig out a bed, a foot or eighteen inches deep, and fill in with peaty leaf-mould, as we have done here, and then apparently, nothing will stop the plant, not even a real, old-fashioned skating winter, with fifteen or more degrees of frost.

For a long time I have had a high opinion of *Gentiana sino-ornata*, but now, after the wonderful hardihood it has shown, I look upon it as not only one of the finest of the plants that have come to us from the east in recent years, but almost, if not quite, the most beautiful and valuable alpine in cultivation at the present time. *Clarence Elliott, Stevenage.*

P.S.—December 9. The frost has given way, a rapid thaw has set in, and this morning our bed of *Gentiana sino-ornata* is looking fresh and brilliant, starred all over with the vivid flowers. At a rough estimate, there are between three and four hundred flowers fully out, a large number of buds on the point of opening, and still others to develop. *C. E.*

MESEMBRYANTHEMUM.

(Continued from page 468.)

45.—*C. ficiforme*, N. E. Br., in *Gard. Chron.*, 1922, v. 72, p. 54, f. 26. Add to reference, *M. faciforme*, Schwantes in *Monatssch. f. Kakt.*, September, 1920, p. 131.

56.—*C. gracilistylum*, N. E. Br., in *Gard. Chron.*, 1922, v. 72, p. 124. Add to synonymy, *M. Chauviniae*, Schwantes in *Monatssch. f. Kakt.*, May, 1920, p. 77, with fig., and *M. augeiforme*, Schwantes in the same volume, p. 78.

Mr. Schwantes having kindly sent to me a portion of his type of *M. Chauviniae*, I find it identical with *C. gracilistylum* (a name first published in 1913). He also informed me that he also believed his *M. augeiforme* to be the same plant, but that it has now entirely died out of cultivation. As one of my plants of *C. gracilistylum* has produced imperfectly formed growths that were "clavate, terete, globose above and about one cm. thick," as described by Mr. Schwantes for *M. augeiforme*, I have no doubt that he is perfectly correct in believing *M. augeiforme* synonymous with *C. gracilistylum*.

13a.—*C. inornatum*, N. E. Br.—Growths very small under cultivation, 2-4 lines high, and 1½-3½ lines in diameter, obconic, convex and circular in outline at the top (type C); orifice ½ line long, level with the surface, not at all depressed; surface smooth, glabrous, green or greyish-green, often tinted with purple on the sides, with the orifice rather indistinctly outlined with darker green, and often having a purple dot on each side at the centre, and with about 2-8 separate, indistinct dots scattered over the top, or sometimes almost without markings. Flowers not seen.

South Africa; locality and collector unknown.

I have had this plant in cultivation for nine years and it has never flowered with me, nor does it grow larger than the dimensions given, so I expect that under natural conditions the growths would scarcely be more than 1½-2 lines in diameter.

7c.—*C. Johannis Winkleri*, N. E. Br.—Growths described as being 2½-5 lines high and 2-3½ lines in diameter, but figured as being 4-7 lines in diameter at the truncate flattish top, circular in outline (type F or I); orifice level with the top, 1-1½ lines long; surface glabrous, glaucous-green, not dotted. Flowers unknown.—Mösem. *Johannis Winkleri*, Dinter in *Fedde Repert. Heikeste (Succulentenforschung in Sudwest Afrika)* vol. 23, pp. 59, 60 (1923), and *M. Johannis Winkleri*, Dinter and Schwantes in *Zeitschr. f. Sukk.* vol. 2, p. 18, with fig. (1925). Great Namaqualand; Klinghardt Mountains, Dinter.

I have not seen this species. It seems to be near to *C. minutiflorum*.

7a.—*C. klaverense*, N. E. Br.—Growths 3-4 lines high, 3½ to 6 lines broad and 3½-4½ lines thick, obconic, elliptic in outline, smooth at the truncate top, which has a broad notch across it sloping upwards and outwards from the orifice to a convex outer part (intermediate between types K and L), orifice 1½-1¾ line long, rather tightly closed; surface smooth, glabrous, greyish-green, with purple sides, and the top sprinkled with small separate and very distinct dark green or purplish dots, which are sometimes irregularly scattered, sometimes arranged in lines, but not forming any regular pattern. Calyx 4-lobed, ovary and part of the tube included in the body of the plant; tube about 1½ lines long; lobes oblong, reddish or whitish. Corolla 5 lines in diameter, expanding at night; tube about 2 lines long; petals about 25-30, in two series, 2½ lines long, ¼-½ line broad, slenderly linear, white. Upper anthers exserted, yellow. Style and stigmas not seen.

Van Rhynsdorp Division; Near Klaver, growing on flat rocks in about an inch of soil, Frith.

Described from a living plant sent to me some years ago by Mr. F. Frith.

33.—*C. leviculum*, N. E. Br. in *Gard. Chron.*, 1922, v. 72, p. 8, fig. 5. *Alisynonym M. glebula*, Schwantes in *Monatssch. f. Kakt.*, August 1920, p. 121, and September 1922, p. 129.

I have not seen a specimen of *M. glebula*, but Mr. Schwantes has informed me that it is identical with *C. leviculum*, N. E. Br., which was published one month earlier (July 1920) as *M. leviculum*, N. E. Br.

2a.—*C. Meyeri*, N. E. Br.—Growths of newly imported plant 4-6 lines high, 2½-3½ lines broad and 2½-3 lines thick, obovooid or obconically subcylindric or very slightly compressed, obtusely rounded or as if very slightly pinched between the finger and thumb at the top, not at all notched or lobed at the apex (type C); orifice ½-¾ line long, quite terminal and not in the least depressed; surface smooth, somewhat harshly velvety-puberulous to the touch, uniformly opaque green without dots or other markings, except when going to rest, when a faint red dot appears on each side of the orifice. Calyx much exserted, membranous, 4-lobed, whitish, with reddish tips to the lobes; tube 2½-3 lines long; lobes 1 line long, ovate or ovate-oblong, obtuse. Corolla (a dried flower only seen) probably 7-8 lines in diameter; tube about 4 lines long, yellow; petals apparently not very numerous, 3-4 lines long, narrowly linear, acute, yellow; no staminodes or inner petals. Stamens many, in about 4 series, all exserted, whitish. Style 4-4½ lines long, as long as or exceeding the stamens, apparently yellowish; stigmas 4, filiform, ½ line long yellow or orange.

Little Namaqualand; vicinity of Steinkopf, Mayer! Marloth 6516!

This is a very distinct species, whose relationship is not very clear. It seems to be a connecting link between *C. Leipoldtii* and the group to which *C. bilobum* belongs, through such species as *C. hahlenbergense* and *C. gracilistylum*. Its surface, as seen under a strong lens, is covered with microscopic points, causing it to feel somewhat harshly velvety to the touch.

7b.—*C. minutiflorum*, N. E. Br.—Growths 6-9 lines high, 6-9 lines broad and 4½-7½ lines thick, obconic, flat or faintly convex at the top (type F); elliptic to nearly circular in outline; orifice depressed, 2-2½ lines long; surface smooth, glabrous, uniformly glaucous-green, without dots or markings, not shining. Calyx 5-6 lobed, tube included in the body of the growth, about 2½ lines long; lobes exserted about 1 line long, oblong, obtuse. Corolla 3-4½ lines in diameter expanding at night and very shortly raised above the surface of the plant; tube about as long as the calyx-tube, petals many, 1½-1¾ line long, linear, clear yellow. Stamens according to Schwantes (for I have not been able to dissect the only flower seen) about 35, the upper exserted

Anthers yellow like the petals. Style, ex Schwantes, 2 lines long; and stigmas 5, about 1½ line long.—*M. calculus* var. *minutiflorum*. Schwantes in *Monatssch. f. Kakt.*, June, 1920, p. 81, with fig. *M. minutiflorum*, Schwantes, in *Monatssch. f. Kakt.*, June 1922, p. 81.

Little Namaqualand; near Ookiep in the Kamiesberg range, Marloth 11,950!

The above description is made partly from a growth of the type plant kindly sent to me by Mr. G. Schwantes, and partly from a plant sent to me by Dr. Marloth. In general appearance this species much resembles *C. subrisum*, N. E. Br., but the characteristic dimples on each side of the orifice of that species are wanting or scarcely evident in *C. minutiflorum*. It is also very much like *C. Pageae*, N. E. Br., but the orifice is not rosy, and the style and stigmas longer than in that species.

12.—*C. minutum*, N. E. Br., in *Gard. Chron.*, 1922, vol. LXXI, p. 231. Add to references, *M. minutum*, Schwantes in *Monatssch. f. Kakt.*, September 1920, p. 131.

25a.—*C. notatum*, N. E. Br.—Growths 4-7 lines long and 3-5 (or sometimes more) lines in diameter, obconic, somewhat circular in outline and flat or very slightly convex at the top (type F). Orifice 1-1½ line long; surface smooth, glabrous, greyish-green, marked on the top with many irregular branching lines formed of confluent or separate blackish-green or purplish dots, and the orifice outlined with similar dots, and with the sides often purplish. Ovary included in the plant. Calyx exserted, 4-5-lobed; tube 2½-2¾ lines long; ¾-to 1 line broad, greenish; lobes 1 line long, oblong, obtuse, reddish. Corolla 5-7½ lines in diameter, expanding in the evening, slightly scented; tube 2½-3 lines long; petals 20-24 in 1-2 series, lax, recurved-spreading, not spirally arranged, very slender, 2½-4 lines long, about ½ line broad, linear, acute, white by artificial light. Stamens about 20, in two series; anthers all more or less exserted, pale yellow. Style 1½ line long, pale green; stigmas 4, erect, 1-1½ line long, greenish-white, attaining to about the middle of the corolla-tube.

South Africa; locality and collector unknown.

Described from living plants that I have had in cultivation for several years. I find that it varies in size from year to year.

23.—*C. obcordellum*, N. E. Br., in *Gard. Chron.*, 1922, vol. LXXI, p. 307. Add to reference, *M. obconollem*, Schwantes in *Monatssch. f. Kakt.*, September 1920, p. 132.

1.—*C. pilosulum*, N. E. Br., in *Gard. Chron.*, 1922, vol. LXXI, p. 214. This has now flowered and proves to be a species of *Gibbaeum*, which see.

11.—*C. Pearsonii*, N. E. Br.—Growths about 6-10 lines high, and 6-13 lines in diameter, very broadly obconic, with a flat circular top which often overhangs the sides (type H); surface smooth, glabrous, uniformly of a light bluish or sub-glaucous-green, not dotted. Calyx 3-5 lobed; tube exserted, whitish, 2-3 lines long; lobes 1 line long, orange or reddish. Corolla 8-11 lines in diameter, expanding in daytime and remaining open irrespective of cloud or sunshine, scentless, lasting about a week; tube longer than the calyx, dull orange-pink; petals 17-38, in two series, 3½-5 lines long, ½-¾ line broad, cuneately linear, obtuse or slightly notched at the apex, widely spreading, rich bright magenta, fading to white at the base, shining; staminodes petal-like (inner petals?), erect at the mouth of the tube, 1½-2 lines long, linear-filiform, very acute, yellow or orange. Stamens all included in the corolla-tube below the staminodes. Style ½-1 line long; stigmas 4, erect, minute, about ¼ line long.—*C. Wettsteinii*, N. E. Br., in *Gard. Chron.*, 1922, vol. LXXI, p. 231. *M. Wettsteinii*, L. Bolus in *Ann. S. Afr. Mus.* vol. 9, p. 141. Excluding all other synonymy.

Van Rhynsdorp Div. Near Bakhuis, Pearson 5469! N. E. Brown.

(To be continued.)

MARKET FRUIT GARDEN.

THE weather of November was of an unusual character. In spite of the fact that there was a spell of twelve consecutive dry days, the total rainfall for the month (3.44 in.) was considerably above the average. This was due to heavy rainfall on ten of the first eleven days. Soon after this the cold period set in, frost occurring nearly every night. It must be a good many years since such a long spell of severe weather was experienced during November in the south of England. As a result of the two extremes of weather, little progress could be made with the most pressing work out-of-doors. Almost as soon as the ground had recovered from the soaking of the opening days it became bound by frost. However, this will have improved the condition of the soil: and one feels that the severe, dry weather must have been healthy for fruit trees and bushes, sending them definitely into a completely dormant state.

A HEAVY APPLE CROP.

Apple picking did not finish until November 6, and packing is not quite completed at the time of writing. It is curious that so many growers under-estimated the crop this year. I shall be surprised if, when the full figures are available, my crop, which I put at under average, does not turn out to have been one of the heaviest I have grown. The late varieties helped greatly to swell the returns. It seems to have been a Cox's Orange Pippin year almost everywhere, and both Lane's Prince Albert and Bramley's Seedling cropped fully. Allington Pippin was very heavily laden, but, unfortunately also badly affected by scab. I wish I had fewer trees of this variety. In spite of its excellent flavour it does not find favour in southern markets, and it is particularly liable to most pests and diseases. Against these faults must be set its heavy and regular bearing habit; but I would sooner be without it. The highest price realised for the best Allington Pippins, which included none of the scabby fruits, was only 4/- per half bushel of 20lb. Bramley's Seedling, after all, reached 7/- per bushel, the price at which I generally consider that it pays better to sell than to risk storing: so I have kept only about 200 bushels.

AIR-COOLED STORAGE OF APPLES.

The cold spell has given a good start to the keeping of Apples by delaying maturity. I have just been reading an American bulletin* which has taught me far more than I ever learnt before about the storage of Apples, although I have read everything that I could find on the subject amongst English publications. It appears that, in America, proper air-cooled stores are to be found on many of the larger fruit farms, though not on the very largest, which grow enough fruit to justify the expense of actual cold storage (refrigeration). An air-cooled store is simply a building with insulated walls and ceiling to maintain an even temperature, and provided with a ventilation system which allows of the admittance of a draught of air whenever the temperature is lower outside the store than it is inside. The cool air is admitted through ventilators at the floor level, whilst the warm air of the store escapes through tall shafts at the top. The Apples themselves generate a certain amount of warmth when first stored, and this warm air tends to rise and start the circulation when the ventilators are opened. It is found that successful storage depends on low temperature to retard ripening, humidity to prevent wilting, and air circulation to carry off the gaseous products resulting from the ripening process. The method followed is to take the first opportunity that occurs in autumn to get the temperature of the store down below 35°. This is done by opening the ventilators when the temperature is lower outside than it is inside the store, and closing them when the reverse con-

ditions obtain. Once the temperature has been reduced to between 32° and 35° the ventilators are closed, and are opened again only occasionally if it becomes necessary to maintain the temperature. The humidity seems to be easily managed. If the air is too dry the Apples wilt, and this is checked by watering the floor or hanging up wet sheets. On the other hand, too moist an atmosphere allows the growth of moulds on the floor and containers, and even on the fruit. This is corrected by admitting air when conditions are right. It is found that the Apples seldom wilt badly if the store has an earth floor. The Apples are stored in boxes or in bins, the latter taking the fruit as much as four feet deep in some cases. Space is allowed between the boxes or bins and the floor, and also between them and the walls, so that air may circulate when the draught is admitted, to carry off any gases that may collect. No mention is made of the use of oiled wrapping papers, which have recently been employed with success in America, and are now being tried in this country.

APPLYING THE SYSTEM.

Probably none of us have stores built on the lines of these American ones: but I think the method of management might be put into practice to some extent. I finished reading the bulletin at 10.30 on a frosty night, and immediately went out to my store, which is a double-walled room divided off from a large barn. I found that the temperature in this room stood at 40°, so I opened the door, or rather substituted a wire netting door which excludes rats and mice, and opened a ventilator in the ceiling. This does not create a circulation of air such as would be obtained if there were proper vents at intervals round the walls at the ground level and a tall shaft in the ceiling, but it may give something approaching the same effect. Anyhow, the temperature was reduced to 38° by the next morning, and a repetition of the treatment the next night brought it down further to 36°, and on the third night to 34°. I have previously been afraid to leave the place open on frosty nights, but evidently it takes a good deal of cooling. Whether the insulation is good enough to maintain the temperature now that I have got it down remains to be seen. The plan is well worth trying, for air-cooled storage is giving much satisfaction in America—so much so that some growers who intended to install actual cold storage plant have not troubled to proceed with the project.

DIGGING AMONGST BUSH FRUITS.

Forking along the rows of bush fruits will occupy a lot of time and labour during the winter. At one time I hoped that I could manage to escape most of this. In a dry autumn, when hoeing can be continued late, and the land got clean and loose on the surface for the winter, digging may possibly be omitted. I should like to do without it, not because of the expense only, but because I consider that it is very liable to do harm. In my conditions, at any rate, the roots of Black Currants are very close under the surface, and it is impossible to dig without disturbing some of them: and I believe that this is very bad for the crop, possibly even tending to bring about "reversion." This winter, however, it cannot be avoided, because the wet autumn has got the soil down hard, and it would be almost impossible to hoe it in spring unless it was dug in advance. Then there is the question of burying manure. Farm-yard manure will find its way in if left on the surface as a mulch, but this is not the case with such substitutes as shoddy and meat meal, on which I have to depend to a great extent. These ought to be dug in to get the best results. Meat meal, indeed, is eaten by birds if left exposed. There is nothing for it but to dig and make the best of it: but it must on no account be anything more than the shallowest possible forking. At one time we used hop spuds for this work. These are very heavy forks with three tines, set at an angle for shallow work. Now, however, I adapt ordinary digging forks for the purpose. The blacksmith heats

the top bar of the fork on either side of the handle and then bends it in the vice to the desired angle. This makes deep work almost impossible, as the tool is not straight enough for it, and it makes shallow forking easier and lighter.

TRAPPING APPLE BLOSSOM WEEVILS.

Some of the sacking bands tied round the stems of Apple trees in May to catch Apple-blossom weevils have now been removed and burnt. The result so far observed is not very brilliant, but it is perhaps good enough to have been worth while. The best catch discovered was eighteen weevils in one band; but I think the average is only about five. When it is considered that each female weevil is capable of spoiling sixty blossoms, and that she may remain active for two years, the result appears in a rather more favourable light. I do not know what the percentage of females is amongst the weevils caught; but it seems likely that, if banding were done regularly over a number of years, it might control the pest enough to be worth while. Anyhow, it appears to be the most promising method so far discovered, and the East Malling Research Station is entitled to the gratitude of growers for having drawn attention to it. In my case the banding was done in a grass orchard, where there are presumably plenty of natural hibernating places for the weevils. Under clean cultivation better results might be obtained. *Market Grower.*

LATE WASPS' NESTS.

I was interested in Mr. A. T. Harrison's notes about "Late Wasps' Nests," which appeared in *The Gardeners' Chronicle*, of November 28, but not surprised to learn that thirty or forty queen wasps were found in one nest early in November. Years ago I made a practice of "taking" wasps' nests in October—often somewhere near the end of the month—in order to obtain a large number of queens. At that time I was living in a fruit-growing district in Somersetshire, and in some seasons wasps took a heavy toll of the choice fruits which were produced in the neighbourhood.

In order to encourage the destruction of these pests, the Somerset Horticultural Society offered prizes for "the greatest number of queen wasps" exhibited at their annual show. The dead queens were pinned on to cardboard, and after the show was over, all were destroyed to make quite sure that the same wasps were not exhibited again the following year! Most of the exhibitors had from 100 to 250 queens, and thought they were doing well. Of course, they were, considering their specimens were collected one by one in early spring or in autumn when the female wasps were on the wing, or by destroying nests in summer. I had no difficulty in showing anything from 1,000 to 2,000 queens on my board, because, instead of "taking" the nests when I found them in summer, and obtaining only one queen from each, I marked the positions carefully and left them until October, when nearly all that remained in the nests were queens. I have taken so many as 300 from one large nest. All these queens do not survive the winter and become the founders of new republics.

In a medium-sized nest there are about 10,000 cells; each cell serves as a lodging for three generations—i.e., 30,000 wasps in a single season from one nest started in spring by one queen. This calculation gives some idea of the astonishingly prolificacy of these insects, and it is easy to suppose that unless some check were put upon their numbers, they would soon become an intolerable nuisance.

Many of the queens do not survive the winter, but probably more of them perish in spring, for, although it is popularly supposed that insect life in general is most abundant after a mild winter, I am not at all sure that this is the case. After all, the severity of the winter matters little to creatures who are either resting in the egg or chrysalis stage, or packed snugly away

**Air-cooled Storage for Apples.* Special Bulletin, No. 146. Agricultural Experiment Station, Michigan State College, East Lansing, Michigan.

in cosy places where frost never reaches them. The critical time is early in spring, when caterpillars have hatched out of their eggs, butterflies have emerged from their chrysalides and queen wasps come out of their warm retreats to enjoy the tempting warmth of the early year. Let a sudden cold snap or a very wet time, come then, and hundreds perish.

It must be remembered that every year, about the beginning of October, a wasp's nest exhibits a singular—some would say, a cruel scene. At this season the wasps cease to bring nourishment to their young. From affectionate mothers, or nurses, they at once become barbarous step-mothers. They drag the young from the cells and carry them out of the nest. Being thus exposed to the weather and deprived of nourishment, they quickly perish. What appears to us cruel and unnatural in this massacre committed annually by the wasps, is perhaps an act of mercy, for if the young were not prematurely destroyed they would die a more cruel and lingering death occasioned by hunger.

Luther R. Richards.

produces highly ornamental fruits ribbed with yellow, green and crimson is Duchess of Oldenburg. This variety was grown as half-standards in ornamental tubs. Trees grafted on the Paradise stock were selected, and these were very prolific. When fresh, the fruit is of moderate quality, but it soon becomes worthless. C. Ruse.

APPLE THE QUEEN.

OFTEN referred to as Saltmarsh's Queen, owing to its having been introduced by a gentleman of that name in 1880, this excellent Apple is somewhat neglected, due, perhaps, to its soft flesh and indifferent keeping qualities. Yet, in its season, it is a good variety and of fine appearance. It is a large, flat Apple, with a very pale yellow skin when ripe, and a liberal quantity of red stripes.

The flesh is white and somewhat acid, it is a most excellent culinary variety, and to some palates useful as a dessert fruit.

Growth is strong and free on the Paradise

were budded or grafted, generally make plenty of strong growths and look in splendid condition. But in lifting such trees it will be found that there are several large roots that need to be severed. This, naturally, reduces the vitality of the tree for the next season. The point then to consider is to balance the top growth with the root system. In a case of this sort, I have always reduced the strong growths and thinned the trees of some of their branches to balance them accordingly, leaving the weaker growths unpruned. This pruning and thinning is done at the same time all the permanent trees are attended to, with good results. Trees of that age that have been lifted one year or two years previously will have more fibrous root and less strong top growth. These may be pruned at the same time as they are planted, or the pruning may be deferred until the spring: in either case, the results are satisfactory.

When this type of tree with strong growths and not many roots is left unpruned for one season the result in most cases is the formation of too many fruit buds and not enough growth buds to build up a shapely bush. Maiden trees, with plenty of fibrous root, may be planted in early autumn or late winter without receiving much check. These I prune in most cases in the spring, because they have plenty of roots to support good growth the next season, and if lifted annually until large enough to be planted in their permanent quarters they do not require much pruning, and do not receive such a check in transplanting as when allowed to grow into larger trees.

I do not lay down any hard and fast rule in pruning newly-planted fruit trees; I am guided by the age of the trees, the roots and the growth they have made. E. Neal.

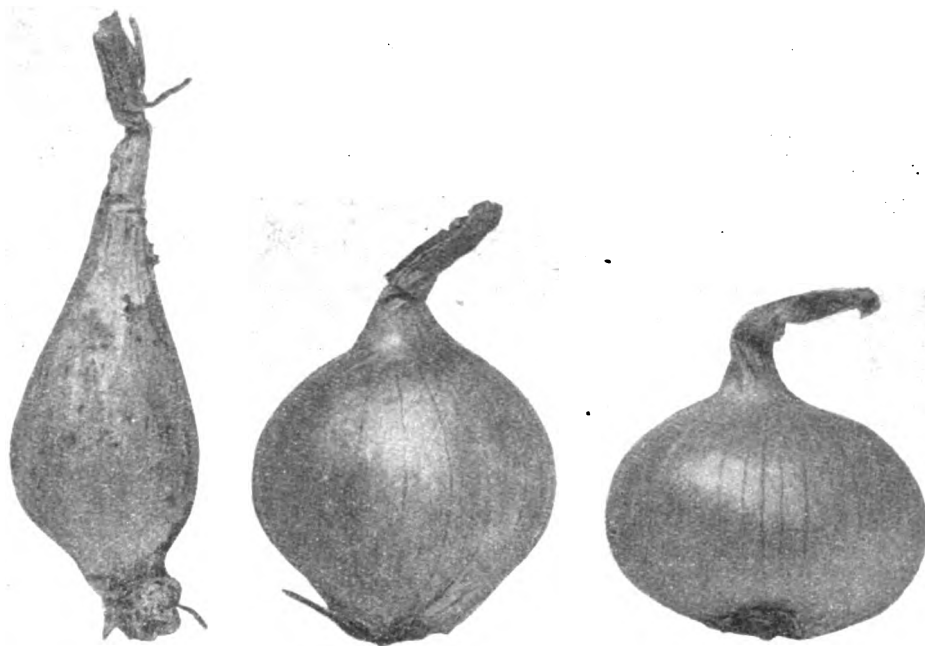


FIG. 202.—TYPES OF SHALLOTS.

Left: TRUE SHALLOT; Centre: RED JERSEY (False Shallot); Right: YELLOW DANISH SHALLOT.

FRUIT REGISTER.

APPLE BEN'S RED

OPINIONS differ respecting the quality of this Apple, but most people will agree that the fruit is attractive in appearance. Being requested to plant a collection of Apples having highly-coloured fruits, this variety was one of those chosen for the purpose. Part of the site to be planted was on water-logged, boggy land, adjoining ornamental pools and borders intended for water-loving plants; it was not an ideal site for producing highly-coloured fruits.

By mere accident a standard tree of Ben's Red was planted in the worst position. This tree made clean, healthy wood of very upright growth, the foliage was of a deep, rich, dark green, and the fruits, although produced rather sparsely, were very highly-coloured and clean, and were the first to be visited by tits. Perhaps these birds were attracted more by the colour than the flavour of the fruit; certainly the birds were very persistent.

Another Apple of fine constitution, erect in growth and making long shoots, which

stock, the tree making a good bush or standard; magnificent fruits are produced on espaliers. It is a good exhibition Apple, in season from October to December. The tree bears regularly an average rather than an over-abundant crop. Ralph E. Arnold.

HARDY FRUIT GARDEN.

PRUNING NEWLY-PLANTED FRUIT TREES.

THE question often arises as to the best time for pruning newly-planted fruit trees, whether at the time of planting or later, and my experience is that there is not a great deal in it, especially if the planting was done fairly early, say not later than the second week in November. In most years the weather is fairly open at this period and the trees have opportunity of becoming well-established in the ground. The age of the trees and the state of their roots have a bearing on the subject; trees four years of age, for instance, which have not been lifted since they

VEGETABLE GARDEN.

THE SHALLOT.

(*ALLIUM ASCALONICUM*).

THE Shallot is a much esteemed member of the Onion family which appears to have a history all its own, so far as its beginnings are concerned, but which in these later days has become somewhat confused. Of this latter point more will be written later.

Confining attention to the true Shallot, *Allium ascalonicum* (Fig. 202, left), its early history appears to be fairly clear. Theophrastus and Pliny were both acquainted with it, and wrote of it as a small Onion under the name *Cepa*. Matthioli, in his *Commentaries on Dioscorides*, printed in Venice in 1558, named it *Cepa Ascalonica* or *Ascalonitides*. Dodonaeus, in the chapter on Onions in his *Herbal*, just mentions *Ascalonicae*, but does not give any illustration of it, although in the *Bijvoegsel* or *Supplement to the Herbal*, he quotes from Matthias Lobel, "*Eschalottes* (Appetits) known as Palestine Onions, which has a nature between Onion and Leek, known in Naderland as *Scal-gornie*; the root is like a *Narcisse*."

In the *Scot's Gardiners' Director* (1754). J. Justice makes a brief reference to the plant, which consists mainly in cultural directions, and regrets that Scallions are now neglected. W. Drummond does not catalogue either the Shallot or Potato Onion. Miller, in the seventh edition (1759) of his *Dictionary*, writes: "There are also the following sorts of Onions cultivated in the kitchen gardens:—The Shallot or *Eschalottes* which is the *Cepa Ascalonica* of Matthioli, 556," (of which see above), and adds "The Welch Onion, I suppose to be the same with *Ciboule* . . . there is also a great affinity between the *Eschalottes* and these, so that they are not well-distinguished yet, for although they are generally cultivated in the gardens, yet they are not well-known to the botanists, some of whom have supposed a greater variety, while others have joined them together, making but two species." While from some aspects of the question the various writers appear to have become by this time somewhat confused,

they are all of one mind in regarding Ascalon as the place of origin."

As regards the name, *Nuttall's Dictionary* gives it as "Shallot, also Eschalot, from old French *eschalote*, from Ascalon, a species of Onion which grows wild in Palestine especially near Ascalon." Ascalon, which, according to Lemprière was a town of Syria, near the Mediterranean, about 520 stadia from Jerusalem, and is still in being, was anciently famous for its Onions, vide Joseph de Bell., *Jud.* 3, v. 2 (*The Wars of the Jews*); and Theophrastus H. P. 7, c. 4. (*History of Plants*).

Information of a later date is given in Ayre's *Treasury of Bible Knowledge* (1872), where we are told on the authority of Thompson's *The Land and the Book*, that "Ascalon is Ashkelon, that it is still in being and is known as El Jore, although the old name is not forgotten. It is a mass of ruins surrounded by rock; orchards are still filled with fruit, and produce Figs and Apples." Dr. Hooker affirms that these Apples are Quinces, *Pyrus Cydonia* (*Quarterly Review*, July, 1863).

Coming now to the present day and examining the different varieties, it is evident at once that confusion has taken place. In an endeavour to put matters straight I cannot do better

difficult to procure, but for use in a private garden it would be very acceptable to those whose palates reject the stronger-flavoured varieties.

Of the synonyms of the Jersey Shallot *The Vegetable Garden* states that:—"The Ghent Shallot and the Russian Shallot differ but little from each other, and resemble the Jersey Shallots. They are vigorous-growing plants with rounded bulbs." The Russian Shallots offered by German firms are described as light yellow, which, in my opinion, is correct. In this connection, the following, taken from the chapters on Onions in *The Vegetable Garden* is of interest. "Yellow Russian Onion, an exceedingly distinct kind, bulbs rather small and thick, with the fault of frequent splitting into cloves, but still keeping, from September to September, better than any other kind; outer skin very leathery of a coppery colour like Strasburg Onion; later it is brown as a Tulip bulb." It appears to the writer that this is a very fair description of the wonderful new Onion which has been several times submitted to the Fruit and Vegetable Committee of the Royal Horticultural Society, and which, on its internal form being laid bare, is seen to be merely a Shallot.

The Schalotten offered by leading firms in Germany are as follows:—Large Red Jersey

CULTIVATION, MANURING AND CROPPING PLANS FOR THE KITCHEN GARDEN.

Not all parts of the average kitchen garden are subjected to the same mode of tillage, neither is the manuring carried out in the same way, and the crops (with certain exceptions) do not occupy the same positions each succeeding year.

In view of this, I could suggest that those responsible for the cultivation of kitchen gardens should provide themselves with some sort of a plan or history of the treatment given each year to the cultivation, manuring and cropping of the garden, to which a note on the achievements of the chief crops might be usefully added. Many might think this matter too trivial to bother about and rather trust to memory, but haphazard methods often result in failure. How much more business-like it is to have a plan to which we can refer when any query arises, thereby leaving the enquirer quite certain about the point in question.

Such a plan may be made useful in many

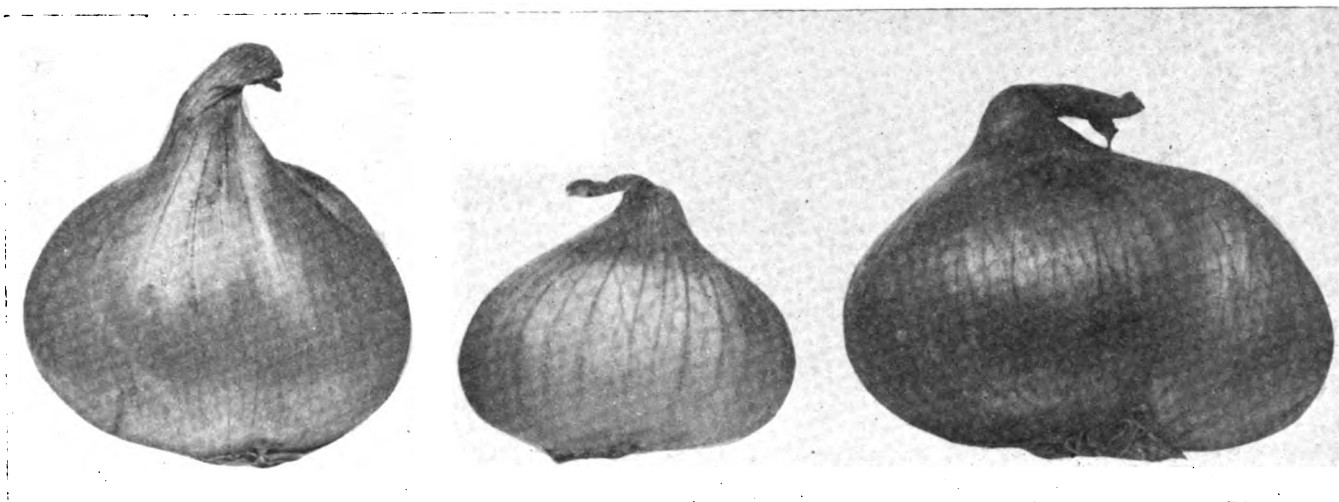


FIG. 203.—TYPES OF SHALLOTS.

Left: YELLOW JERSEY SHALLOT; Centre: JERSEY SILVER WHITE SHALLOT; Right: RED JERSEY SHALLOT (from German Seed).

than follow the arrangement given in Vilmorin's *Vegetable Garden* which is most orderly and reliable. The first variety is the Common or True Shallot (Fig. 202, left), which is an elongated bulb growing in a cluster, of a russet grey colour, with thick and very tough skin, and very long keeping. The flesh is greenish at the base of the bulb and violet at the top. This type is more grown than any other in France. It is a plant which seldom produces seed, but the bulbs, when planted, speedily divide into numerous cloves which remain attached to a common disc and become as strong as the parent bulb. A few varieties of this true type are offered in the Paris markets, and are apparently slight modifications, varying only in size or earliness, from the parent. For pickling, Mr. E. Beckett considers the old variety, sometimes called Chesters, to be excellent.

The next variety is the Jersey, or False, Shallot (Fig. 202, centre, and Fig. 203, left), and this is the one with which British growers are most acquainted. It is a flattened, roundish bulb, with a thin, coppery red skin, and violet coloured flesh; it flowers and seeds freely. It may be propagated in the ordinary way, but bulbs raised from seeds grow mostly like a flat Onion at first, although when fully developed they produce clusters weighing from six to twelve ounces, springing from a common disc. It is softer in texture than the true Shallot and does not keep so long; in other respects its qualities are much the same.

There is a Silver White variety (Fig. 203, centre), which is soft and very mild. It is somewhat

and Danish. A well known firm offers Common Red and Danish or Jersey. There is evidently an error here, but if the word "Jersey" is added to the Common Red it would put matters straight. The true Danish Shallot (Fig. 202, right) is rather smaller than the Jersey, with firmer flesh, and is long keeping. The skin is of a straw-yellow colour, and the flesh nearly white. It has the merit of producing flowers and seeds and a crop of bulbs in the same season, but it is not yet popular in England.

The closing sentence in the description of the Jersey Shallot in *The Vegetable Garden* reads as follows:—"The Jersey Shallot in all the characteristics of its growth resembles an Onion, amongst which it might be classed after Potato Onion." Some of the German seed firms have the same idea, and although the true Potato Onion does not produce seed or bulblets but has to be propagated from cloves formed under ground, they are offering seed of the following varieties:—Large Yellow (brown), Large Red, both long keeping; Russian light yellow, and white the latter described as very soft and tender.

In my article on Winter Onions which appeared in *The Gardeners' Chronicle* of November 22, 1924, I stated that as they appeared under a caption "*Allium ascalonicum* var.," they are doubtless akin to the Shallot. This is confirmed by the fact that in a trial made at Witham this year; by the side of samples of Red and Yellow Shallots (Fig. 203, left and right) they appear to be identical. The trial sample of seed of the Russian variety did not germinate. S. B. Dicks.

ways. For instance, it could indicate the kind of tillage practised, such as ridging and trenching. The portions of the ground manured could also be shown, and whether with organic or artificial fertilisers, the amount used, and the date of application. In the same category should come that all-important substance—lime, the application of which is so frequently neglected. Where it is used only on certain parts of the garden without a record being kept, doubt and confusion at some later period often arise, as to the actual site of application.

The position of the crops, including catch-crops and intercrops, should also be shown. This is of the utmost importance for the furtherance of some form of crop rotation. It is also a means of determining the particular plot occupied by a crop that has been infected with some pest or disease, so that the particular site may be avoided for crops of a similar nature for a considerable period.

A note book should be kept for the recording of crop results. Some crops succeed in certain positions, while in others the same kind of crop is a dismal failure. Quantities and times of applying the various manures should also be noted, as well as mistakes to be avoided in the future, and any other interesting feature as it presents itself.

Besides being interesting, some very striking information is very often brought to light, especially with regard to methods of applying manures, such as the depth at which they are buried; also the effect of one crop on another, etc.

As to the actual working of this scheme, I advocate the use of two plans each year, one to indicate the cropping and the other manuring and tillage. During the course of the season a rough sketch may be made of the various items, to be copied on to the permanent plan during the more leisured evenings of winter. It will be advisable to use both black and red ink for each plan.

For the one dealing with manures and tillage the lines and lettering of black could represent the positions manured, and the red would serve for tillage. On the cropping plan, black ink could mark the maincrops, leaving the red to indicate the intercrops and catch-crops. In all gardens a record should be kept of the position of existing drains. *J. Wilson, Wisley.*

HOME CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed by correspondents.

The Destruction of White Fly.—This small fly is increasing in numbers and extending the range of its host plants, in fact, few species of greenhouse plants are immune from attack. I was recently called, in an advisory capacity, to a greenhouse which contained a miscellaneous collection of plants, and almost every specimen was infested with White Fly. I decided to try fumigation with tetrachlorethane as a remedy, and this proved very successful. The structure was fumigated on three occasions at intervals of one week, as the fumigant will not destroy the eggs. Two and-a-half ounces of tetrachlorethane poured on the path of a glasshouse will fumigate 1,000 cubic feet. The chemical may be purchased from druggists at a cost of two shillings per pound. It is desirable to fumigate on a calm evening, and it is essential that the atmosphere of the greenhouse should be dry when the house is closed. *Geo. H. Copley, N.D.H.*

Bluebottle Flies and Ivy.—Recently having been troubled with bluebottle flies in the conservatory, I found large numbers of the flies on the flowers of tree Ivy close to the house. The Ivy was sprayed with a poison wash, and I have not seen many flies since, although I fear they will emerge from their hiding place at some more congenial season. *B. Collins, The Warren Garden, Birkdale, Lancs.*

Limonium binervosum, C. E. Salm. (*Statice binervosa* G. E. Sm.).—Mr. R. E. Arnold's note upon this plant (*Gard. Chron.*, December 5, p. 443), is somewhat puzzling and leads me to think that some other species may be intended. So far as I am aware, no European species of Sea Lavender can be described as an "alpine," and, although in some parts of the Continent members of the genus occur many miles inland, none of the habitats are at all montane. *L. binervosum* (of which a detailed account may be found in *Journ. Bot.* 1903, p. 68), is widely distributed in our Islands, being found practically all round the coast of England, very sparingly in southern Scotland and in many parts of Ireland. It occurs upon sea cliffs, in salt marshes and in sandy stations near the coast, and in favourable localities reaches a height of eighteen inches or more. For some years I grew this species on a sloping bank in rather stiff soil and found it perfectly hardy inland, and needing no special protection in the winter. I should much like to examine Mr. Arnold's plant. *C. E. Salmon, Pilgrim's Way, Reigate.*

Arauja sericifera.—Is Mr. F. W. Smith quite sure of his identification of the two species of moths he mentions in his notes on this plant on p. 451? His "Potsherd" is, I suppose, the Potherb moth (*Mamestra oleracea*), which might very well be trapped by the flowers; but what his "Vapourer" is, I don't know, because the true Vapourer (*Orgyia antiqua*) flies in the hot sunshine and is not attracted to flowers, because its proboscis is rudimentary. *C. Nicholson.*

SOCIETIES.

ROYAL HORTICULTURAL

DECEMBER 15.—The last meeting of the year, which was held on this date, at Vincent Square, followed precedent in being small. Orchids were rather more numerous than usual at this season, and the chief subjects before the Floral Committee were *Chrysanthemums*, *Carnations*, and sprays of hardy shrubs. There was no exhibit before the Fruit and Vegetable Committee. The table spaces not occupied by legitimate exhibits were filled with bottled fruit, paintings and drawings of flowers and garden scenes.

Orchid Committee.

Present: Mr. C. J. Lucas (in the chair), Mr. Gurney Wilson (Hon. Sec.), Mr. Fred. J. Hanbury, Mr. H. T. Pitt, Mr. S. W. Flory, Mr. Fred K. Sander, Mr. H. G. Alexander, Mr. Charles H. Curtis, Mr. J. E. Shill, Mr. H. H. Smith, Mr. A. McBean, Mr. T. Armstrong, Mr. E. R. Ashton, and Mr. Richard G. Thwaites.

AWARDS OF MERIT.

Cypripedium The Princess (*Alcibiades* × *Alcedo*).—A bold hybrid with a large, rounded dorsal sepal which has a wavy margin. The colour is green, heavily spotted with blackish-purple and margined with white. The petals are green with brown shading and dark blackish purple markings. Lip, green with some brown shading. Shown by Messrs. ARMSTRONG AND BROWN.

Cypripedium Cardinal Mercier (*Lathamianum* × ?).—A handsome flower, with bright, purplish markings on the dorsal sepal, this colour being admirably set off by the white apex. The petals and lip are green and brown. A belief was expressed that this hybrid had received an award, but there was no record to that effect in the Committee books. Shown by Messrs. ARMSTRONG AND BROWN.

Scuticaria Steelii.—This interesting species now rarely seen, is a native of British Guiana, and appears to have been introduced in 1834. It is one of a group of terete-leaved Orchids, and usually grown on rafts or wood blocks, so that the long leaves (from two feet to four feet long) depend therefrom. The flowers, borne in a one- to three-flowered scape, appear at the base of the plant, consequently they are quite effective as the long leaves hang clear of them. Each flower is about three inches across, and the sepals, petals and lip are light yellow, spotted and blotched with red-brown. As all the parts of the flower are thick and fleshy, the blooms last a long time in good condition. Shown by Sir H. S. LEON, Bletchley Park, Bletchley.

GROUPS.

A handsome and large group of Orchids occupied most of the space between the entrance door and the Orchid Annex. This was from Captain DRUMMOND (gr. Mr. Lewis Smith), Cadland Park, Southampton. Sprays of *Pittosporum* were used as a background, and all the pots were clothed in green moss. The principal Orchids were *Cypripediums*, but there were also nice examples of the white *Calanthe Harrissii*, *Cattleya Annette*, *C. Maggie Raphael* var. *alba*, and *C. Octave Doin*. Among the one hundred and twenty *Cypripediums*, all in capital health, a few of the prominent sorts were *C. insigne* *Sanderac*, *C. Maudiae* *magnificum*, *C. Arachne* var. *Sunset*, *C. Lord Wolmer*, *C. Mme. Albert* *Fevrier*, *C. Corsair*, *Westonbirt* var. *C. Bianca*, *C. Curtisii* var. *Sanderac*, *C. Germaine* *Opoix*, and the dainty *C. Niobe*, *Westonbirt* var. *Messrs. SANDERS'* exhibit was very bright and interesting, as it contained fine spikes of *Oncidium tigrinum*, a central plant of the golden-flowered *Laelio-Cattleya Luminosa*, *Laelia Gouldiana*—not often seen nowadays; *Brasso-Cattleya Bangkok* (B.C. Mrs. J. Leemann × L.C. *Harroldiana*), B.C. *Jessopii*, with yellow lip as well as yellow sepals and petals; numerous good *Cypripediums*, and the quaint little, orange-coloured *Sophro-Laelio-Cattleya Marriotiana*. *BARON SCHRÖDER* (gr. Mr. J. E. Shill), Dell Park, Egham, exhibited a lovely flower

of the new *Brasso-Laelio-Cattleya Flavida*, obtained by crossing B.-L.-C. *Amber* with L.-C. *Golden Queen*. The flower is of beautiful form and soft yellow colouring, with light brownish-red stainings on the centre of the finely displayed and wavy-margined lip.

Messrs. STUART LOW AND Co.'s little group contained some fine spikes of hybrid *Odontoglossums* and *Odontiodas*, in addition to *Oncidium bicallosum*, with a fine sturdy spike: *Sophro-Laelio-Cattleya Dorea* var. *Fire King*, of glowing colour; some good *Cypripediums* and *Zygopetalum Mackayi*. Messrs. BLACK AND FLOXY submitted finely flowered plants of *Brasso-Cattleya The Provost*, *Laelio-Cattleya Yule* (C. *Comet* × L.-C. *Dominiana*), the lovely white *Cattleya Eveline Sander*, and a few fine *Cypripediums*.

Messrs. A. J. KEELING AND SONS, Westgate Hill, Bradford, sent several fine *Cypripediums*, including *C. Our Prince* and *C. F. M. Ogilvie*, var. *Excelsa*. Messrs. COWAN AND Co. had an interesting small group of *Cypripediums*, among which *C. Perseus*, *C. Joyce Hammer*, *C. Memoria* *F. M. Ogilvie*, *C. Tigris* and *C. Actaeus* var. *Durbar*, were outstanding.

Floral Committee.

A Section.—*Present:* Mr. H. B. May (in the chair), Mr. J. F. McLeod, Mr. Arthur Turner, Mr. H. J. Jones, Mr. W. Howe, Mr. J. M. Bridgford, Mr. Montagu C. Allwood, Mr. E. R. Jones, Mr. W. H. Page, Mr. J. B. Ridgway, Mr. F. Streeter, Mr. W. B. Ginzell, Mr. D. B. Crane, and Mr. Charles E. Pearson.

B Section.—*Present:* Mr. Charles T. Musgrave (in the chair), Mr. W. J. Bean, Mr. Gerald Loder, Mr. James Hudson, Mr. G. Reuthe, Mr. Reginald Cory, Mr. C. Williams, Mr. F. G. Preston, Mr. Clarence Elliott, Mr. T. Hay, Mr. E. A. Bowles, Mr. A. Bedford, Mr. R. C. Notcutt, Sir Wm. Lawrence, Mr. A. Bedford and Mr. W. B. Cranfield.

AWARDS OF MERIT.

Carnation Mary Pearson.—The award was given to this Fancy variety chiefly on account of its delicious perfume. It is a well-formed bloom of dark heliotrope colouring, occasionally splashed with red on the inner petals. Shown by Messrs. STUART LOW AND Co.

Carnation Sir Alfred Mond.—A handsome, show *Carnation* of good size, compact form and possessing an excellent calyx. The bright crimson blooms are borne on long, stout stems. Shown by LADY MOND, Melchet Court, Romsey.

Chrysanthemum Bianca.—A pretty Japanese variety of good useful market size, flattish shape and bright, rosy-fawn colouring. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Chrysanthemum Omega.—Although this large incurved Japanese variety has not the form required for the show board, it possesses considerable decorative value. The broad, florets are lightly tinted with pale apricot on the inner surface, and are of polished yellow colour on the outer sides. The yellow is most seen, and the combination of colours gives a golden-bronze effect. Shown by Mr. H. SHOESMITH, Junr.

Chrysanthemum Phryne.—This is a useful decorative Japanese variety, rather below medium size, and of delicate soft pink colouring. The compact blooms possess unusual depth for the type. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Chrysanthemum Zenith.—A single variety of a little more than medium size and good round shape. The broad florets are heavily stippled with reddish terra-cotta on a yellow ground, and there is a distinct zone of the yellow base colour. Shown by Messrs. KEITH LUXFORD AND Co.

Lachenalia Boundii.—This is a valuable variety of sturdy habit. The racemes bear plenty of deep coral flowers which are lightly tipped with green and chocolate. Shown by Mr. W. P. BOUND, Redhill, Surrey.

GROUPS.

Carnations and *Chrysanthemums* shared the honours of the show, and the groups of both flowers made bright and attractive oases among the sundries and pictorial exhibits. The very

meritorious collection set up by Mr. C. ENGELMANN included beautiful vases of Tarzan, crimson; Delice, pink; Rouge, bright red; Saffron, yellow; Red Laddie, Improved Ward and Nero, an attractive Fancy variety.

A large vase of Philip Sassoon, of rich crimson colour, was prominent in the collection of Carnations displayed by Messrs. STUART LOW AND CO., who also showed fresh and bright blooms of Mrs. Ives Improved, Eileen Low, pink; Orange Sunstar and Sheila Greer, fancy. Messrs. ALLWOOD BROS. included some pretty little bowls of Dianthus Allwoodii in their collection. The chief varieties were Freda, pink; Phoebe, deep rose; Beatrice, salmon pink; and Jenny, delicate pink. Their Carnations included Canadian Pink, White Pearl, Shot Silk and Laddie.

The largest collection of Chrysanthemums was arranged by Mr. A. G. VINTEN, and this was composed of vases of single and Japanese varieties of the type valued for market purposes. The chief singles were Mrs. W. E. Catlow, yellow; Bridgwater Absolute, bright red, tipped with golden yellow; and Robert Collins, orange-buff. Amongst the Japanese varieties were December Bronze, Favourite, white; Balcombe Beauty, rich yellow; Golden Glory, Willington Pink and Captain Fox.

A further selection of Chrysanthemums raised from seeds and grown naturally was contributed by Messrs. SUTTON AND SONS. The sprays were chiefly of single sorts of good colours and considerable decorative value. Mr. A. YOUNG had a goodly batch of the bright yellow Sunshine Wilcox, which finds a ready sale at Covent Garden Market, and Messrs. KEITH LUXFORD AND CO. set up several vases of good disbudded blooms of J. Barrell, a single of Mensa type and size and reddish terra-cotta colour, brightened by a golden zone.

LADY MOND (gr. Mr. W. Petty), Melchet Court, Romsey, sent a collection of well-grown Gesnera hybrids, which represented a good range of colours. Those of pink and of orange shades were especially valuable.

A collection of well-flowered greenhouse Cyclamens was staged by Mr. ARTHUR SHAMBROOK. The plants were all of the crested type and represented good strains with white and deep rose-pink flowers, and also some with the claret-purple blotch at the base of the flowers, which is characteristic of the species, *C. persicum*.

A collection of cool greenhouse Dracaenas, of decorative size, was shown by Messrs. L. R. RUSSELL, LTD. This included plants of *D. indivisa Doucettii* and *D. indivisa Doucettii Albertii*, which have white-margined leaves, *D. Beekii*, with bronzy-purple foliage, and the green-leaved *D. Brantii*. They also showed small plants of *Phormium atropurpureum*.

The Hon. VICARY GIBBS (gr. Mr. E. Beckett), Aldenham House, Elstree, exhibited a large and interesting collection of cut sprays of hardy shrubs to illustrate the colour value of their branches and twigs. The dull light of the hall prevented their full attractions being disclosed, though other arrangement might have been made to increase the effect of the exhibit. There were one hundred different sorts on view. Those with reddish skin and bark included *Salix vitellina britzensis*, *Cornus alba*, and other species and varieties, *Berberis* in variety, particularly *B. diutophylla*, and leafless stems of *Polygonum polystachyum*. *Salix vitellina* provided good yellow colouring. Sprays of *Tamarix*, still retaining some of their feathery foliage, were very attractive. Other subjects included various species of *Rosa* and *Bamboos*.

A compact group of hardy Conifers and other evergreens, staged by Messrs. WILSON AND AGAR, included *Retinosporus* of bright yellow colour, *Ligustrum tricolor* and *Myrtus communis*. Miss GLADYS HOUSE again showed her attractive little gardens; Mr. F. G. WOOD had miniature alpine gardens, and the Misses HOPKINS showed heavily fruited branches of *Privet*, sprays of *Laurustinus*, and early blooms of *Van Thol Tulips*.

Well-berried bushes of *Skimmia japonica*, with various Heaths in flower, were displayed by Messrs. MAXWELL AND BEALE. The latter

included *Erica carnea* Queen Mary, of bright pink colour, *E. carnea alba*, and *E. mediterranea* hybrids. Mr. J. KLINKERT brought a selection of topiary specimens, mostly in Box.

There were many exhibits of preserved fruits, garden sundries and pictures, and Messrs. GUNN AND CO. again showed a good selection of lawn mowers and garden tools.

Fruit and Vegetable Committee.

Present: Mr. C. G. A. Nix (in the chair). Mr. J. Cheal, Mr. W. Poupert, Mr. W. F. Giles, Mr. A. W. Micalfe, Mr. E. Beckett, Mr. G. Kelf, Mr. H. Prince, Mr. G. A. Bunyard, and Mr. W. J. Lobjoit.

There was no exhibit before this Committee.

READING AND DISTRICT GARDENERS'.

THERE was an excellent attendance of the members at the fortnightly meeting of this association held on the 30th ult. Mr. A. W. Gower presided, and was supported by the President, Mr. Frank E. Moring. The subject for discussion was "Early-flowering Chrysanthemums," and this was introduced by Mr. W. Seaman, Gresham Nursery, Staines, a representative of the Egham Gardeners' Society. There was a splendid entry in the competition for four dishes of Apples, two culinary and two dessert varieties, ten exhibits being staged. The first prize was awarded to Mr. M. GODDARD, Bear Wood Gardens, the second to Mr. F. J. GREEN, Aldermaston Court Gardens, and the third to Mr. C. W. WRIGHT, Beenham Lodge Gardens. A seedling Chrysanthemum was shown by Mr. C. J. Howlett, The Yews, Earley, who also staged several varieties of Apples.

GLASGOW AND WEST OF SCOTLAND.

THE closing meeting of the year, which was held on the 2nd inst., was devoted to what is customarily called "hat night," and the papers handed in by members covered a wide range of subjects. An interesting discussion took place regarding the future management of the annual exhibitions. Several speakers favoured a renewal of partnership with the Corporation, while others emphasized the advantages of the Society reverting to the old arrangement, by which it was the sole promoter. It is chiefly a question of finance, but whatever the ultimate decision may be, the general opinion of the meeting was antagonistic to the old conditions whereby the Society did all the work and were not informed of the financial results. A question involving the best method of exhibiting Pansies and Violas gave rise to a lively expression of opinion. Mr. Wilson, who had competed at Liverpool, Southport and Saltaire shows, favoured the English system of staging the blooms in vases, and Mr. McAlpine also spoke of the advantages of that arrangement over the Scotch method of using boards. A subsequent speaker condemned Pansies and Violas as unsuitable for exhibition, and while admitting their service in the garden as an edging, he extravagantly advocated their consignment to the rubbish heap! Mr. John Smellie claimed that he was the first exhibitor to introduce the staging of Pansies and Violas in vases, at the English shows, and added that he was awarded a first prize on that occasion.

CATALOGUES RECEIVED.

J. W. COLE AND SON, Peterborough.—Chrysanthemums Pelargoniums, etc.
KEITH LUXFORD & CO., Sheering Nurseries, Harlow.—Chrysanthemums and Perpetual-flowering Carnations.
ALEX. DICKSON AND SONS, LTD., Hawthorn, Belfast.—Seeds.
PERRY'S HARDY PLANT FARM, Enfield.—Japanese, American and European Lilies.
CARTER AND CO., RAYNES PARK, S.W.20.—Seeds.
H. SCOTT AND SONS, Woodside, South Norwood, S.E.—Horticultural Sundries.
BARR AND SONS, 11, King Street, Covent Garden, W.C.—Bulbs; surplus stock.
HARRISON AND SONS, St. James' Street, Leicester.—Vegetable Seeds.
AUSTIN AND MCASLAN, Mitchell Street, Glasgow.—Alpines, trees and shrubs, fruit trees, etc.
LITTLE AND BALLANTYNE, Carlisle.—Trees, etc.
MOREL AND CO., LTD., 150, Finchley Road, N.W.3.—Roses, fruit trees, etc.

ANSWERS TO CORRESPONDENTS.

CHRYSANTHEMUMS IN SMALL POTS.—G. T. Chrysanthemums grown in six-inch pots for the decoration of the side stages of a conservatory require special treatment. Cuttings should be rooted early in March, and in due course the decorative varieties should have their growths pinched several times to induce a bushy habit. The large-flowered varieties may be grown in the same way, but in this case only one large bloom is obtained; plants rooted during March should be stopped during May, and only one strong shoot retained afterwards. Decorative varieties are naturally dwarf and bushy and are best for small pots. All the Caprice du Printemps varieties are excellent; they include Butler's Caprice, Kathleen Thompson, White Caprice, Purple Caprice, and Yellow Caprice. Blanche Poitvene is excellent, naturally dwarf, and flowers during October. Other good sorts are Brilliant, Bronze Uxbridge, December Gold, December Bronze, Framfield Pink, Sunshine, Rosalind, Miss A. Brooker, Yellow Money-maker and Golden Butterfly. A few good singles are Ladysmith, Ceddie Mason, Countess of Egmont, Hilda Shoebridge, Kitty Bourne, Mary Morris, Miss D. Hilder, Miss Mary Pope, Sweet Auburn, Sylvia Slade, Mary Richardson, and Caterham Bronze.

DISEASED LAUREL.—M. A. G. A fungus—not in a stage of development in which it could be identified—was present on the young wood of the Laurel. All affected parts should be cut off and burnt.

GARDENERS' WAGES DURING ILLNESS.—H. C. A contract of service is not terminated by incapacity to work caused by reason of temporary illness, and it has been held that if the employment has not been terminated by notice, the servant can recover his wages during the period of his absence, unless he is in receipt of sick pay under rules, or compensation under the Workman's Compensation Act. If you were employed as a weekly servant, entitled to give or receive a week's notice, and your employer did not give you notice, you would appear to have a good claim, but without full information on all the facts, it is not possible to state definitely.

NAMES OF PLANTS: *P. N. 1*, *Picea polita*; *2*, *P. hondoensis*; *3*, *P. Morinda*; *4*, *Abies amabilis*; *5*, *Libocedrus decurrens*; *T. E. P.* The flower was much too faded for correct identification. *P. R. M.* *Escallonia macrantha*. *M. A. C.* *Cotoneaster frigida*.

Communications Received.—E. J. M.—A. J. S.—E. A. S. V.—Constant Reader.—R. F. B.—L.—G. B.—W. T.—C. H.—W. B. P.—F. W. D.—J. W. B.—F. H. J.—K. Y.—D. B.—G. H. D.—A. T. H.—G. E. J.—H. S.

GARDENING APPOINTMENTS.

Mr. John Nibbs for the past two years and three months Gardener to K. K. CARSON, Esq., Frimhurst, Frimley Green, Surrey, and previously four-and-a-half years at Whitmore Lodge, Sunningdale, Berkshire, as Gardener to H. PRICE, Esq., Waldronhyrst, South Croydon, Surrey. (Thanks for 1/- for R.G.O.F. Box.—EDS.)

Mr. W. Foulkes, as Gardener to LT.-COL. MOSS, Hillfield Park, Aldenham, Watford, Hertfordshire. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. H. G. Smith for over five years Gardener to Mrs. KNOX, Springhill, Moreton-in-Marsh, Gloucestershire, as Gardener to MAJOR SIR FRANCIS BURDETT Bart., Rumsbury Manor, Wiltshire. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. T. Botteny, formerly gardener to Mrs. NORMAN COOKSON, The Hermitage, Newick, Sussex, as Gardener to M. S. CHATTERTON, Esq., Highlands, Redhill, Surrey. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. Thos. Beeson, for the past twenty-five years Gardener-bailiff to the late Mr. and Mrs. J. NEWTON MAPPIN, at Headley Park, Epsom, as gardener-bailiff to Mr. and Mrs. G. K. WEEKS, the new owners of Headley Park. (Thanks for 4/- for R.G.O.F. Box.—EDS.)

MARKETS.

COVENT GARDEN, Tuesday, December 15th, 1925.

Plants in Pots, etc.; Average Wholesale Prices.

(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Brica gracilis	
cuneatum	10 0-12 0	48's per doz.	24 0-30 0
per doz.	10 0-12 0	—nivalls, 48's	
—elegans	10 0-12 0	per doz.	24 0-30 0
Aralia Sieboldii	9 0-10 0	above varieties	
Araucarias, per		in 60's, per	
doz.	30 0-42 0	doz.	12 0-15 0
Asparagus plu-		—in Thumbe,	
mosus	12 0-18 0	per doz.	9 0-10 0
—Sprengeri	12 0-18 0	Marguerites, 48's	
Aspidistra, green	36 0-60 0	per doz.	18 0-21 0
Asplenium, per		Nephrolepis in	
doz.	12 0-18 0	variety	12 0-18 0
—32's	24 0-30 0	—32's	24 0-30 0
—nidus	12 0-15 0	Palma, Kentia	30 0-48 0
Cacti, per tray		—60's	15 0-18 0
—12's, 15's	5 0-7 0	Pteris, in variety	10 0-15 0
Chrysanthemums, pot		—large 60's	5 0-6 0
grown, in variety,		—small	4 0-5 0
48's, per doz.	15 0-24 0	—72's per tray	
Crocus, per doz.	30 0-45 0	of 15's	2 6-3 0
Cyclamens, 48's		Roman Hyacinth,	
in variety, per		on bulbs, per	
doz.	24 0-30 0	doz.	4 6-5 0
Cyrtomium	10 0-25 0	Solanums, 48's,	
Erica hyemalis		per doz.	15 0-18 0
—48's, per doz.	24 0-30 0		
—60's, per doz.	15 0-18 0		

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum deco-		French Flowers—	
rum, doz. bun.	15 0-18 0	—Narcissus	
cuneatum, per		Paper White,	
doz. bun.	10 0-12 0	per doz. bun.	8 0-9 0
Arums (Richar-		—Narcissus	
dias) per doz.	10 0-15 0	Soleil d'Or,	
Asparagus plu-		per doz. bun.	10 0-12 0
mosus, per		—Parma Violets,	
bun., long		per bun.	7 0-8 0
trails, 6's,	2 0-3 0	—Ranunculus,	
med. sprays	1 6-2 6	scarlet, per	
short	0 9-1 3	doz. bun.	10 0-12 0
Sprengeri, per		—carmine, per	
bun.	1 6-2 0	doz. bun.	9 0-12 0
long sprays...	1 6-2 0	—orange,	
med. " "	1 0-1 6	doz. bun.	15 0-18 0
short " "	0 4-1 0	—Chillies, red	
Bouvardia,		and yellow,	
white, per		per pad	7 0-8 0
doz. bun.	15 0-18 0	—Solanum	
Camellias, white		berries, per	
per box, 12's	3 0-3 6	pad	15 0-18 0
Carnations, per		Gardenias, per	
doz. blooms	3 6-5 6	box, 12's, 18's	
Chrysanthem-		Heather, white,	
ums		per doz. bun.	10 0-12 0
white, large		pink, per doz.	9 0-12 0
blooms, per		Honesty, per	
doz.	6 0-8 0	doz. bun.	18 0-30 0
—yellow, large		Hyacinthus, Roman,	
blooms, per		per doz. bun.	27 0-36 0
doz.	5 0-6 0	—12's	27 0-36 0
pink, large		Lilac, white, per	
blooms, per		doz. sprays	8 0-9 0
doz.	6 0-7 0	Lilium longiflorum	
—bronze, large		long, per doz.	5 0-5 6
blooms, per		—speciosum	
doz.	5 0-6 0	album, long,	
above colours—		per doz.	4 0-5 0
—medium blooms,		—short, per doz.	3 6-4 6
per doz.	4 0-5 0	—speciosum	
—white spray		rubrum, long,	
per doz. bun.	24 0-30 0	per doz.	4 0-4 6
—yellow, spray,		blooms	4 0-4 6
per doz. bun.	18 0-24 0	—short, doz.	
—pink, spray,		blooms	3 0-3 6
per doz. bun.	21 0-27 0	Lily-of-the-Valley,	
—bronze spray,		per doz. bun.	30 0-36 0
per doz. bun.	18 0-24 0	—Cattleyas	
Croton leaves		per doz.	24 0-30 0
per doz.	1 9-2 6	—Cyrtopodiums	
Daffodils, single,		per doz.	5 0-7 0
per doz. bun.	30 0-36 0	Poinsettias, per	
Fern, French,		doz. blooms	18 0-24 0
per doz. bun.	10 0-12 0	Roses, per doz.	
French Flowers—		blooms, Rich-	
—Acacia (Mi-		mond	6 0-8 0
mosa) per doz.		—Liberty	6 0-8 0
bun.	12 0-15 0	—Madame	
—Anemone De		Butterfly	6 0-8 0
Caen, per doz.		—Madame Abel	
bun.	21 0-24 0	Chatenay	4 6-6 0
Eucalyptus, per		—Melody	6 0-8 0
pad	5 0-6 0	—Molly Sharman	
—Marguerites,		Crawford	3 0-4 6
yellow, per		—Ophelia	6 0-8 0
doz. bun.	3 6-4 6	—Sunburst	6 0-8 0
		Smilax, per doz.	
		trails	2 0-2 6
		Violets	4 0-6 0

REMARKS.—In this department conditions are similar to those reported last week. Prices remain firm for blooms of the best quality. The severe weather has checked supplies from all quarters, and only a moderate demand has been maintained. Trade should show great improvement towards the week-end. Chrysanthemums provide the chief supplies, and there are still some very inferior grades amongst the disbudded blooms. Amongst bunched stuff, Heston White, Winter Cheer, Ballock's Crimson,

and Miss Wilcox are the principal varieties. Arums (Richardias) appear to be getting dearer, but Lillium longiflorum remains as previously quoted. Poinsettias, Daffodils and White Lilac are now arriving in good condition. White and coloured Tulips, on bulbs, and also Hyacinths, are now on sale in limited quantities.

If weather conditions permit, business will be very brisk in the plant department during the next few days, for all flowering plants, Ferns of all sizes, Ericas, Azaleas, Chrysanthemums, Cyclamens, Marguerites, Hyacinths and Tulips on bulbs, Solanums and a few Begonias, will be the chief attractions, and large supplies of these will be despatched to the provinces, weather permitting. Erica hyemalis is the newest line amongst the Heaths, and is in excellent condition, but higher prices are anticipated for all grades during the next week. There appear to be ample supplies of Mistletoe and Christmas Trees; the former is in excellent condition, at prices from 12/- to 18/- per crate. Holly varies considerably in price according to quality; a few lots are arriving from Cornwall in good condition.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, green		Mushrooms,	
per doz.	4 0-6 0	—French	1 6-3 0
Asparagus—		—cupes	3 0-4 0
—English	4 0-6 0	—Broilers	2 0-2 6
—Paris Green	8 6-9 6	Onions—	
—Spruce	1 3-1 6	—Dutch	7 0-7 6
Beans—		—English, per	
—French	4 0-5 0	owl.	7 6-8 0
—Midshire, per		—Valencia	9 0-10 0
basket	2 0-6 0	Paranipe, per	
—Forced, per lb	3 0-4 0	owl.	6 0-7 6
Finest		Potatoes—	
Best	2 0-2 6	—King Edward,	
Beets, per cwt.	6 0-8 0	per cwt.	6 6-8 0
Cabbage, per		—others	4 6-6 0
tally	6 0-10 0	New Potatoes—	
Celery, per doz.		—Algerian	0 2-0 3
fans	16 0-30 0	—Azores, per	
Cauliflowers—		case	20 0-30 0
—St. Malo, per		—Canary Island	10 0-20 0
crate	6 0-8 0	—Guernsey	0 6-1 3
Carrots, per bag	6 0-8 6	Rhubarb, forced	
Chicory, Belgian		per doz. bun-	
per lb	0 8 0 9	dies	4 6-6 0
Cucumbers, per		Seakale, per	
doz.	18 0-27 0	punnet	3 0-3 6
Endive, per doz.	2 0-3 0	Sprouts, per i	
Horseradish, per		bag	3 0-5 0
bundle	1 3-2 0	Savoys, per doz.	1 6-2 6
Lettuce, per doz.	5 0-6 0	Tomatoes, English,	
—French Cos,		per strike—	
per doz.	6 0-7 0	—pink, new crop	6 0-10 0
Mint, forced	4 0-6 0	—C a n a r y	
		Island	10 0-16 0
		Turnips, per cwt.	5 0-6 0

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English,		Cobnuts, per lb	1 2-1 3
per i-sieve		Dates (Tunis)	
—Cox's special	10 0-15 0	per doz. cartons	4 0-6 0
—best	6 0-8 0	Grapes, per lb	
—others	3 0-4 0	Alicante	1 6-2 6
—Allington Pippin	2 0-3 0	—Guernsey	10 0-1 6
—Ribston Pippin	4 0-5 0	—Colmar	1 6-3 6
Apples, Cooking—		—Muscat	4 0-7 0
—Bramley's		—Almerian,	
Seedling	4 0-8 0	per barrel	15 0-27 6
—Lane's Prince		Belgian—	
Albert	4 0-6 0	—Muscats	3 0-4 6
—Blenheim		—Black	1 3-2 0
Pippin	4 0-8 0	Grape Fruit,	
Apples, American		—Jamaica	16 0-20 0
Jonathan	18 0-15 0	—Isle of Pines	21 0-22 6
—Californian	13 0-15 6	—Florida	27 6-30 0
—Oregon		Lemons, Messina,	
—Newtown	17 0-18 6	per box	16 0-22 0
—York Imperial		—Malaga	18 0-22 0
Spitzenberg	28 0-32 0	Pines	2 6-4 6
Apples, Nova		Pears, Californian—	
Scouta—		—D'Anjou	17 0-18 0
—Kings	21 0-25 0	—Nelis	23 0-24 0
—Russ's	18 0-24 0	—Comio, per i	
—Blenheim,		case	15 0-20 0
barrels	16 0-21 0	—Keiffer, per	
—Baldwin	17 0-21 0	barrel	25 0-28 0
Bananas	17 0-27 6	South African	
—Spanish	22 0-24 0	—Oranges	12 0-18 0
Chestnuts,		—Dania	12 0-20 0
Italian, per		—Jamaica	12 0-16 0
bag	25 0-30 0	—Mureia	12 0-20 0
—French, per		—Malaga	12 0-23 0
bag	15 0-22 0	Walnuts, French,	
		per bag	7 0-8 0
		—Corns	40 0-45 0

REMARKS.—Better conditions have obtained in the market during the past week. Hothouse Grapes are arriving in increased quantities, and there is a satisfactory demand. Two comparatively heavy shipments of Pine-apples are advised, and if in good condition, these will undoubtedly meet a firm enquiry. Apples from the North American continent are in good supply, and quotations are at a slightly higher level. English Cox's Orange Pippin are still plentiful, and where offered at moderate prices, move out freely. Home-grown cooking Apples do not sell well, unless large and well-packed; second grade Apples are difficult to clear at any price. Oranges are not plentiful, and where in condition are realising good prices. Bananas are a steady trade and show little or no variation in price. Tomatoes from the Canary Islands are, at the moment, in very poor demand. A few English new crop Tomatoes, of good colour and condition, are making satisfactory prices, but old crop fruits are not wanted. A few Cucumbers are being marketed at a fairly high figure. Forced Beans are scarcer and making exclusive

prices. Hothouse Peas are selling well. A few new Potatoes from Guernsey are meeting a good demand but others from the Canary Islands, Sicily and the Azores are not so much in demand. France is sending rather large quantities of Mushrooms, but home-grown samples are scarce and dear. French Asparagus (Paris Green) is selling comparatively well, but English forced Asparagus is, unfortunately, having a bad period, mainly through lack of colour. Salads are selling well and will continue to be a good trade until Christmas. Ample supplies of Cauliflowers are arriving from St. Malo, and with green vegetables on the short side, are selling well. The trade in old Potatoes continues fairly good.

GLASGOW.

A moderate business was done in the cut flower market during the past week when the higher level of prices was well maintained, and in a few cases a further advance was registered. Good Chrysanthemum blooms found a ready sale at the following quotations:—Duckham, 2.9 to 3.3 for 6's; Godfrey, 1.6 to 2.3; Phyllis Cooper, 1.9 to 2.3; Mary Morris and Mrs. Roots, 1.6 to 2.4; Florrie King, 1.3 to 1.6; Niveus, 1.7 to 1.6; Sunshine and Baldock's Crimson, 1.6 to 1.3; White Thorpe, 1.9 to 2.4; Wilcox (special), 1.3 to 1.6, medium, 9d. to 7.14, 26/- to 30/- and were worth from 4d. to 1.6 per bunch. Narcissi were dearer at 30/- per cane, and Honesty made 2/- to 2.6. Carnations were firm at 5/- to 6.6, while Madame Butterfly and Ophelia Roses were steady at 6/- to 8/- per dozen. Richardias advanced to 6/- and 7/- per dozen; L. speciosum rubrum, 3/- to 4/-; L. longiflorum, 6/- to 7/-; English Violets ranged from 2/- to 2.6; French, 2.6 to 3.4, and Parma, 6/- to 8/- per bunch, while Lily-of-the-Valley fluctuated between 1.6 and 2/- per bunch. First deliveries of French Mistletoe realised 25/- to 30/- per crate, and specially selected, 18/- to 20/- per hamper. Variegated Holly brought 2 to 3 per box. Bows of Hyacinths sold at 1.3 to 1.6 each, and Tulips were firm at 1.3 to 2.6, according to size.

Trade was good in the fruit section. Oranges were in short supply and buyers had to concede increased values. Jamaica fruit averaged 15/-, Murcia, 36d. to 16/-; 30d. to 18/-; Valencia, 36d. to 50d. 12.6 to 15.6; 30d. 15.6 to 20/-; 42d. 28/- to 35/-; 7.14, 26/- to 30/- and 10.64, 30/- to 32/-; Jamaica Grape Fruits were worth from 21/- to 24.6, and Porto Rico, 22/- to 24/- per case. Winter Nels Pears were rather slower to move; Californian made 28/- to 30/- per case, while Beurre d'Anjou were 10/- to 14/-; Doyenné du Commerce, 15/- to 20/-; and Glon Moreau, 16/- to 17/-; Tangerines, 60's, made 2.3 per box; 55's, 2/-; and 50's 1.7. Apples continued firm, especially Newtown Pippin which advanced to 18/- and 20/- per case. Other varieties sold as follow:—American Winesap, 14.6 to 17/-; Delicious, 15/- to 17/-; Spitzenberg, 14.6 to 16/-; Winter Banana, 12/- to 14/-; and Rome Beauty, 12.6 to 15/-; There were special auction sales of Jonathans during the week and prices ranged from 15.6 for first grade fruit, down to 11.6 for third grade. Canadian King Pippins were higher at 34/- to 37/- per barrel; Northern Spies, 27/- to 30/-; Baldwin, 20/- to 26/-; and Greenings, 32/- to 34.6; Virginian Winesap, 30/- to 31/-; York Imperial, 28/- to 30/-; Gano, 20/- to 24/-; and Ben Davis, 18/- to 22/-; English Bramley's Seedling, 16/- to 20/- per cwt.; and Lane's Prince Albert, 14/- to 18/-; English and Scotch Colmar Grapes were worth from 1.6 to 3/- per lb.; and Belgian, 1.3 to 1.6, while Almeria made anything from 10/- to 26/- per barrel—considerable quantities, comprising the past week's arrivals in the Clyde, were badly wasted, and were disposed of at 1/- to 5/- per barrel.

Scotch and Tenerife Tomatoes were unsaleable with certain salesmen, while others gave a nominal quotation of 4d. to 9d. per lb. for the former. French Cauliflowers brought from 7/- to 8/- per crate of two dozen; Dutch, 3/- to 4/-; Lettuce, 1.9 to 2.4; Horse Radish, 1.6 to 2/-; French Beans, 1.9 to 2.6, and Madeira, 5/- to 6/-; Although no definite decision has been made, it is expected that markets will be open up till one o'clock on Christmas Day.

WEATHER IN SCOTLAND.

THE WEATHER IN NOVEMBER.

THE month, generally, was cold and dry. The barometer throughout the month remained fairly high (mean 1015.5 mbs., or 29.8 in.). The winds were light to moderate in intensity, but very variable in direction. The weather remained very "open" throughout the month, although very cold. Hoar frost was observed very frequently, and a light covering of snow was noted on several mornings. Most of the snow fell during the period from the 24th to the 30th. During the middle portion of the month, visibility was rather poor owing to haze, but actual fog was recorded only on the 16th and 18th. Dundee was very fortunate in this respect. A display of the aurora borealis was seen on the 9th, most clearly at 9 p.m. The mean barometric pressure was 1015.5 mbs., or 29.8 ins. The highest reading (1037 mbs., or 30.62 ins.) was noted on the 19th, and the lowest on the 7th (993.6 mbs., or 29.34 ins.). From the 19th onwards the barometer fell. This was the period when most snow fell. Rainfall was slight; the total was .62 inches, of which .38 ins. fell as snow and hail during the 29th and 30th. On the 7th, when the barometer was at its lowest, there was a heavy fall of rain, .11 ins. The mean temperature for the month was 36.5°. The highest maximum occurred at the beginning of the month, the 2nd, and the mean maximum was 40°, and the mean minimum, 32.9°, the lowest minimum of 27° was recorded on the 18th, 19th and 26th. Ground frost was noted on twenty-two days, the lowest readings (18°) being taken on the 19th and 26th. The soil temperature at one foot deep fell 12° during the month, being 35° at the close. The total sunshine for the month was 86 hours, giving a daily average of 2.87 hours, and a percentage of 20. This is slightly above normal. There were only four days when no bright sunshine was recorded. On the 4th, at the beginning of the month, 7.4 hours were recorded. Wm. McClelland, Director of Studies, The Training College Gardens, Magill, Dundee.

THE Gardeners' Chronicle

No. 2035—SATURDAY, DECEMBER 26, 1925

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AVERAGE MEAN TEMPERATURE for the ensuing week deduced from observations during the last fifty years at Greenwich, 38.6°

ACTUAL TEMPERATURE—

The Gardeners' Chronicle Office, 5, Tavistock Street, Covent Garden, London, Tuesday, December 23, 10 a.m. Bar. 28.9. Temp. 41°. Weather Wet.

The Gardens of Ancient Mexico. A delightfully vivid account of "The Gardens of Ancient Mexico" appears in the *Annual Report of the Smithsonian Institution* for 1923 (published 1925). The ancient Mexicans were great gardeners and their gardens were of many kinds—the poorer had the equivalent of our cottage gardens and, in ascending series, the grander had "flower places," "places of many flowers," walled gardens and "palaces of flowers." There were also the so-called but misnamed floating gardens—artificial islands built of mud and debris in shallow lagoons, girt about by Willow-like trees, and finally, true floating gardens were not unknown. Cortes expressed his amazed admiration of the gardens of Mexico in a letter to the Emperor Charles V.—"very refreshing gardens with many trees and sweet scented flowers . . . a large orchard near the house overlooked by a high terrace . . . within the orchard a great square pool of fresh water with sides of handsome masonry, around which a walk runs with well-laid pavement of tiles so wide that four persons can walk abreast on it . . . in all 1,600 paces." Cortes' companion, Bernal Diaz, describes walks "bordered with Roses and flowers and many fruit trees and flowering shrubs . . . all like the enchantments written

about in Amadis of Gaul." The ill-fated Montezuma was a great gardener and possessed many gardens. Those he loved most contained nothing but medicinal and aromatic herbs, flowers, native Roses and trees with fragrant blossom. With kingly disdain of utility, no vegetables or fruits were allowed to grow in these gardens—according to him, vegetable gardens and orchards were for slaves or merchants. Nevertheless he had many orchards but he kept them at a distance. "Alpine" gardens also were not unknown; for on the hill of Chapultepec, the base of which was planted with groves of Swamp Cypress, there were plantations of trees at the top and, on the way up, terraces with hanging gardens. As Zelia Nuttall, the author of this account of Mexican gardens, observes, the native gardeners had no doubt learned that many plants thrive best when their roots are planted among the rocks and thus screened from the heat of the sun. When we, in this country, were perforce building our houses on the low ground of river valleys, Montezuma was laying out pleasure grounds and palaces on high hills whence magnificent views were to be had. So well he loved his gardens that when captive Montezuma was wont to beg Cortes, as the greatest of privileges, permission to visit his pleasantries, the conqueror was pleased to grant his captive leave, and to report complacently to his Emperor that Montezuma always returned from his brief visits very gaily and contentedly. Of all Montezuma's gardens the most wonderful was the tropical garden at Huaxtepec. It was already established in 1450, in the year when the unfortunate monarch ascended the throne. The garden was situated in the tropical region south of the valley of Mexico. Its maintenance and extension became the King's care. He sent to the magnate of the neighbourhood, the Lord of Cuextlatela, for specimens of "The Vanilla Orchid with roots," Magnolias and other plants, and he brought gardeners from the districts where these plants grew to replant and tend them in his garden. What care they took would shame even the most meticulous of modern gardeners. They fasted for eight days and annointed the plants with blood drawn from the lobes of their ears. They made great sacrifice to the God of Flowers. The treatment was efficacious. The plants grew for these careful gardeners better even than they had been wont to grow in their native homes, and it is interesting to observe that Montezuma instead of ascribing the results to himself—as we perhaps would be apt to do had we made such sacrifice, lifted his hands to heaven and thanked the God of all Creation for the success of the experiment. The well-watered garden with vast variety of fruit trees, herbs and sweet-scented flowers was the admiration of all the Conquistadores from Cortes downward. And well it might be; with *Caesalpinia Crista*—the Brazilwood from the Gulf of Mexico; the strangely flowered *Cheiranthodendron pentadactylon*, with the joined bases of its stamens simulating the appearance of a small red hand and its reputation as a heart tonic; the *Avocado* (*Persea americana*), the *Guava* (*Psidium Guajava*), the *Capolin* (*Prunus Capuli*); and a host of other tropical and sub-tropical flowering trees and shrubs, *Aralias*, *Yuccas*, *Tree Ferns* and *Palms*. Among lesser plants were *Tigridias*, good to look at and to eat, *Tagetes*, *Orchids*, *Zinnias*, *Amaryllids*, *Bouvardias*, *Lantanas*, *Bromeliads*, *Dahlias*, and a host of other lovely things which used to

adorn the conservatories of our fathers. Thanks to the thoroughness of the conquerors little more than a trace remains of this first and greatest tropical botanical garden of the great lord Montezuma. Present cultivators might learn not a little from the wisdom of his great people. One of the greatest of the Mexican kings who reigned in the fifteenth century, whose fame as a law-giver, philosopher and poet still endures, added to his many beneficent enactments, laws for the conservation of woods and forests. So late as 1830 a great double grove of gigantic *Cupressus* of more than one thousand trees still preserved the memory of the great king. To-day only the relics of this noble plantation exist. Miss Zelia Nuttall's account of ancient Mexican gardens concludes with a description of the Chinampas or floating gardens. The Chinampas were apparently not floating, but simply raised gardens built up originally in flat land apparently to secure the plants from flood. Later, the same system was applied in shallow lagoons. The garden was built up by sods of grass, reeds and mud on the top of which layer after layer of lake sediment was piled. Thus-wise indeed the Chinampa people still make their gardens in the Lake of Xochimilco—oblong, raised plots from twenty to one hundred feet long and seven to forty feet wide, staked off with canes and begirt with Willows which are always closely pruned so that whilst their foliage does not shade the garden their roots form a living rampart to the raised garden bed. Recently, the Water Hyacinth, *Eichornea crassipes*, has been introduced and pressed into the service of the Chinampas builders. Laid out to dry, these plants form the foundation and each year the bed is raised and top dressed again. Not only vegetables, but Maize and flowers of all kinds are raised and have been raised for centuries by these thrifty intensive cultivators who, of course, get several crops during the year. The lucky purchasers of annuals raised in the Chinampas have no transplantation troubles. The plants are raised thus: a layer of mud, six to seven inches thick, is run on the surface and allowed to dry somewhat. In this layer seedlings are pricked off. When the plants are well rooted the bed is watered and chopped out in squares so that each segment contains a plant. As the blocks dry they are lifted and so each plant is sent to market with its root comfortably ensconced in a neat block of mud. Those who find Wallflowers and Antirrhinums apt to give trouble in transplanting might well take a leaf from the Chinampas gardeners' book. There were, however, true floating gardens in ancient Mexico. They owed their origin to the caprice of a king and to the contrivance of his gardener subjects. In punishment of their independent ways the gardeners were required to bring vegetables growing on a raft to the capital. They brought them thus and flowers as well. The king, however, was a hard man, gathering where he had not strewed. He summoned the gardeners, "You are powerful and all things are easy to you. In future your tribute shall be the raft-borne vegetables and flowers; and on the raft must be a heron and a duck sitting each on her eggs. If the eggs do not hatch their fate is yours." Thanks to the kind encouragement of their tribal god the Mexicans fulfilled the impossible task and every year for half a century raft and sitting heron and duck arrived safely and

the eggs hatched punctually. But by the end of that time the Mexicans would have no more of it. They refused the tribute and achieved freedom; but long afterward the water-garden figured in national pageants—a symbol of the gardener's resourcefulness and love of freedom. Some day perhaps the ancient garden glories of Mexico will be restored. To-day the glory is departed; and "all the rest for which they toiled forgo."

Southport Flower Show, 1925.—It is with considerable pleasure we learn that the great exhibition held in August last under the auspices of the Southport Corporation, proved a financial as well as a floricultural success. The total expenditure amounted to £7,258 2s. 8d., and the income to £7,336 6s. 3d., leaving a surplus of £80 3s. 7d. The chief items of expenditure were £1,833 10s. 3d., for preparing and reinstating the show grounds in Victoria Park; printing, stationery, advertising and bill posting, £1,106 6s. 5d.; prizes and judging fees in the horticultural section, £2,297 6s. 10d.; prizes and judging fees in horse-leaping competitions, £421 6s. 4d.; bands, £311 12s. 11d.; salaries, police, water, catering, etc., £639 18s. 11d. The figures under income show that tickets, party tickets and cash taken at the gates amounted to the splendid total of £6,070 11s. 8d., while the sale of programmes brought in £160 10s. 4d., and rents from the horticultural sundries avenue came to £236 13s. 4d. We see that the authorities debited the account with £319 19s. 0d. as chargeable to the 1924 show. The capital account shows that whereas there was a deficit of £2,211 18s. 3d. on the 1924 show, the assets, together with the proportion of expenditure chargeable to future shows (capital account) are sufficient to meet the liabilities, apart from the value of Silver Cups presented to the committee. Assuming that success continues to attend the Southport Flower Show—and we see no good reason why it should not—the Southport Borough's treasurer will be able, in a very few years, to present a balance sheet showing valuable assets and no liabilities. We congratulate the Southport authorities upon their enterprise, and the excellent financial position they can show at the close of the accounts for their second year's exhibition.

A New Fruit-Vegetable.—Mr. J. O'Keefe a rancher of Cupertino, California, is said by *The Seed World* (of Chicago) to have created a new fruit-vegetable by crossing the Stone Tomato and the Bell Pepper. The resulting product, which he has christened the "Torpepo," is about the size of a large Tomato, and is brightly coloured green and gold. In shape it is bulging, but flattened at top and bottom. The side walls are rather thicker than in the Tomato, and the seeds do not quite fill the cavity; the flavour is said to be intermediate between that of the two parents, and is considered to be very fine, whether the fruit is baked or eaten raw. The Torpepo is considered to have better keeping qualities than either of its parents, and the plants bear heavily over a long season.

Royal Caledonian Horticultural Society.—This Society has arranged to hold its next exhibition on September 8 and 9, 1926, in the Waverley Market, Edinburgh.

Publisher's Twenty-five Years' Jubilee. Dr. Arthur Georgi, the publisher of *Die Gartenwelt*, of Berlin, has just celebrated his twenty-fifth year as publisher to the firm of Paul Parey, which produces a number of books as well as the gardening journal. The celebration took place at the offices of the firm on the 1st of December, in the presence of the entire staff of about 150 persons. Complimentary speeches were made, and dozens of the finest floral tributes were sent for the occasion. A further celebration on December 4, took the form of a complimentary dinner at the Hotel Prinz Albrecht, given to Dr. Georgi and his brother by the staff. He has also received an honour from the University of Leipzig, having been made an honorary Dr. of Veterinary Medicine.

Mr. Keith Luxford.—Not many horticulturists commence their business career in a certain branch of floriculture and continue therein through various grades of responsibility and eventually start a business of their own in the same special line. Mr. Keith Luxford has done so, however, and unquestionably his success as a Chrysanthemum raiser, distributor, grower and exhibitor has been achieved as a result of specialising. When a mere lad Mr. Luxford used to assist Mr. Shawyer, of Bevely Heath, a noted grower, and later he entered service with the late Mr. W. Wells, at Merstham. He remained at Merstham for thirteen years, acquiring a wide and intimate knowledge of the propagation, cultivation and display of Chrysanthemums. As with many other young men, so with Mr. Luxford, the war occupied several important years of his life, but before he left the army he determined to commence business on his own account. In 1919 he obtained a nursery at Sheering, where his specialised



MR. KEITH LUXFORD.

experience and business acumen have brought him success. In addition to enlarging his place at Sheering, Mr. Luxford has now a nursery at Harlow. All the propagating is done at Sheering, and the seven thousand Chrysanthemums for the production of exhibition blooms are cultivated at Harlow. Mr. Luxford is a staunch believer in "rested" stock, consequently he plants out annually no fewer than 150,000 Chrysanthemums for stock purposes, and it is only from these that he propagates. The many fine Chrysanthemums Mr. Luxford has introduced have been described from time to time in these pages; he is also a distributor of fine varieties from other raisers and all the new sorts raised by Mr. T. W. Pockett, in Australia, are first offered to enthusiasts through Mr. Luxford. Perpetual-flowering Carnations are also a feature of Mr. Luxford's business and he grows about 50,000 plants, in 80 varieties. Mr. Luxford's recent successes include handsome cups won at Eastbourne and Southport and gold medals at Brighton, Sheffield, Hull, Norwich, and the National Chrysanthemum Society's Show in November last.

Taxes on French Grapes.—The German Government has increased the import tax on French Grapes from M4 to M45 per quintal, and has also proportionately raised the tax on market garden produce. The cultivators in the South of France are bitterly complaining of this duty, which they envisage as practically prohibiting the entrance of their

produce into Germany. The matter has been raised in the French Senate, and it is urged that a fresh fiscal agreement be made with Germany, whereby the tax may be reduced at least to that imposed on Italian and Spanish Grapes, i.e., M7.00. The Minister of Commerce has promised to see what can be done in this direction, and the growers have had, perforce, for the time being, to be satisfied.

"Gartenschoenheit" Winter Number.—The December number of our German contemporary, *Gartenschoenheit*, is particularly attractive. It contains some really excellent coloured plates, including two of *Poinsettia pulcherrima*, one of which shows the plant as a room decoration associated with pot Cyclamens. These latter plants form the subjects of two more plates, and a fifth, in one colour only—deep blue—depicts a lovely specimen of *Celtis occidentalis* overhanging a lake. Besides these there are many plates in black and white which show to the best advantage on the art paper used throughout. Among other interesting articles is one on "Historical Trees in Leiden," with a number of illustrations, including one of the famous *Ginkgo biloba* in the botanic garden of that ancient city, about thirty metres tall, which is thought to be the oldest specimen in Europe. Cactus growers will also be interested in an article on Cacti in the dwelling-house, illustrated by photographs of a practical, small "house" built into an ordinary window and made to close with a glass door.

An Early Nectarine Flower.—Mr. A. J. Smith, Honington Hall Gardens, near Norwich, has sent us a Nectarine twig, with one expanded flower, which opened, out-of-doors, on December 13. The variety was Lord Napier, and the tree has received no protection from the severe weather, which included 22° of frost on one occasion, and several frosts of from 8° to 20°.

Maturity and Yield Trials of First Early Potatoes.—A report on "the Maturity and Yield Trials of First Early Potatoes, 1924," is given in the current issue of the *Journal of the National Institute of Botany*.* This report, by Mr. Wilfred H. Parker, occupies twenty pages, and presents with great detail the results of trials at Ormskirk, Cheshire; Kirton, Lincolnshire; Truro, Cornwall; and near Edinburgh. These trials, like those of the preceding year, were conducted under the direction of the Potato Committee of the Institute, and the chairman of the committee, Dr. R. N. Salaman has throughout been in close personal touch with the work as it has progressed. With the exception of Dunvegan—which was temporarily withdrawn from the market by its producers—the varieties tested were the same as those tested in 1923, namely, America, Immune Ashleaf, Di-Vernon and Snowdrop, immune sorts; and Duke of York, Epicure, Sharpe's Express, May Queen and Ninety-fold, susceptible varieties. We gather that in the maturity test at Ormskirk, Ninety-fold was significantly earlier than Duke of York and Sharpe's Express in both years, and earlier than Epicure, Di-Vernon, America, May Queen and Immune Ashleaf in one year. Epicure was earlier than Duke of York, Immune Ashleaf and Sharpe's Express in both years, but earlier than May Queen and Snowdrop in one year only. Di-Vernon was significantly earlier than Snowdrop, Duke of York, Immune Ashleaf and Sharpe's Express in both years; America was also significantly earlier than Snowdrop, Duke of York, Immune Ashleaf and Sharpe's Express in both years. May Queen was significantly earlier than Snowdrop, Immune Ashleaf and Sharpe's Express in both years, but earlier than Duke of York in one year only. Snowdrop proved significantly earlier than Sharpe's Express in both years; Duke of York earlier than Immune Ashleaf and Sharpe's Express in one year; Immune Ashleaf earlier than

* The *Journal of the National Institute of Botany*, Nov. 4, 1925. National Institute of Agricultural Botany, Huntingdon Road, Cambridge. Post free 1/2.

Sharpe's Express in one year; and Sharpe's Express "significantly earlier than nil." In the yield tests at Ormskirk, Sharpe's Express cropped more heavily than May Queen, America and Di-Vernon in both years, and better than Duke of York, Immune Ashleaf, Snowdrop and Ninety-fold in one year. Epicure exceeded Di-Vernon in both years, and exceeded Snowdrop May Queen, America and Ninety-fold in one year. Duke of York gave a better yield than Di-Vernon in both years, and was better than Snowdrop, May Queen, America and Ninety-fold in one year. Immune Ashleaf yielded better than Di-Vernon in both years, and superior than May Queen, America and Ninety-fold in one year. Snowdrop gave a heavier crop than Di-Vernon in both seasons, and a heavier one than May Queen, America and Ninety-fold in one year only. May Queen exceeded Di-Vernon in one year, as also did America; Di-Vernon and Ninety-fold were at the bottom of the list in regard to yield. We have given these comparisons to show with what exceeding care the trials have been conducted. The report sets out the results of the Maturity and Yield trials at all stations in tabular form, discusses the behaviour of varieties as indicated above, cites probable errors, states the kind of soil in which the Potatoes were grown, the yield of ware and the percentage of ware to the total production, and a summary of results. From the last we learn that the order of maturity deduced from the available records for the two years 1923 and 1924 is—Di-Vernon, Ninety-fold, Epicure, May Queen, Duke of York, Snowdrop, Immune Ashleaf and Sharpe's Express. With regard to yield, full data were available from all stations in both years, with the result that the varieties were placed as follows:—Epicure, Duke of York, Sharpe's Express, Immune Ashleaf, America, Ninety-fold, May Queen, Snowdrop and Di-Vernon. Commercial Potato growers will find much useful information in the report, while all gardeners who have to produce early Potatoes will also find it handy for reference, especially as the testing stations have a wide geographical range.

Scottish Sweet Pea Society.—The pleasing announcement was made at the recent annual meeting of the Elgin Horticultural Society that next year the Scottish Sweet Pea, Rose and Carnation Society will hold its annual provincial show in conjunction with that of the Elgin Society. In intimating the good news, Mr. T. L. Mann, the president, said the holding of the Scottish Sweet Pea show at Elgin was a favour extended only to the larger cities, as a rule, and the fact that Elgin had been selected on this occasion was an honour not only to their society but to the city. In view of the honour conferred, it had been determined to make their show this year of two days duration, the dates fixed upon being August 18 and 19.

Presentation to Mr. A. C. Hill.—At the Parochial Hall, West Kensington Park, on December 17, the Rev. W. A. Simmonds, on behalf of the St. Matthews Social Club, presented Mr. A. C. Hill with a handsome oak, striking clock, as a token of appreciation of his work in connection with the social functions during the past nine years. In making the presentation the Rev. W. A. Simmonds referred to Mr. Hill's organising abilities, and the good work he had done for the Church and Club. The presentation was made in the presence of over two hundred members and friends, including many well-known horticulturists who have been associated with Mr. Hill in his work as Secretary of the United Horticultural Benefit and Provident Society.

Royal Gardeners' Orphan Fund.—The annual general meeting of subscribers to the Royal Gardeners' Orphan Fund will be held at "Simpson's," 100, Strand, London, W.C., on Wednesday, February 10, 1926, at 3 p.m. At this meeting there will be presented the Report of the Committee and Statement of Accounts for the past year. There will also be the usual election of officers and committee, and election of orphans to receive benefits from the Fund.

On election, candidates receive an allowance of five shillings weekly until they attain the age of fifteen years, and we understand that in special circumstances, such as when a child wins a scholarship, the committee exercises its power of extending the allowance for a further period up to two years. Accepted candidates receive an allowance of half-a-crown weekly while awaiting election. The benefits of the Fund are not confined to orphans of gardeners only, but are extended to orphans of foremen in private gardens, and managers or departmental foremen in nursery and seed establishments. Nominations must be in the hands of the secretary, 19, Bedford Chambers, Covent Garden, W.C.2, not later than January 20 next, in order that they may be submitted to the forthcoming annual meeting.

"Gardeners' Chronicle" Seventy-five Years Ago.—*Phaius grandifolius*.—Perhaps no plant, either in the Orchid house or stove, better repays a little extra care and attention than this *Phaius*, and if induced to put forth its blossoms at this season of the year, it is sure to be greatly admired. A plant of it here, at the present time, is sending up twelve flower spikes, each about five feet high, and having from twelve to seventeen blossoms, and the leaves are from three to four feet in length, giving the plant altogether a noble, Palm-like appearance. In describing the method of cultivating it, we will begin with a young plant in February. I then place it at once in the warmest part of the stove or Orchid house and give it every encouragement in the way of plenty of root room, heat, air, and moisture. The soil which



FIG. 204.—CHRYSANTHEMUM PHRYNE.

N.C.S. First-Class Certificate, December 14; R.H.S. Award of Merit, December 15.

(see p. 502).

Importation of Bulbs in the U.S.A.—According to Dr. C. L. Marlatt, chairman of the U.S.A. Federal Horticultural Board, no fewer than 276,002,753 bulbs were imported into the U.S.A. during 1925, as compared with 258,737,465 in 1924. The largest number, 180,339,967 bulbs, were imported from Holland; 64,502,701 from France; 17,941,397 from Germany; 10,002,932 from Japan; 1,375,121 from China; and 1,023,892 from England. Of the various subjects, the largest importation was of Narcissi, with a total of 106,314,049 bulbs; Tulips came next with 96,290,452 bulbs, and then followed Hyacinths, 27,947,261; Lily of the Valley, 18,980,311 crowns; Lilies, 11,207,559; Crocuses, 10,624,670; Scillas, 1,742,514; Muscari, 906,259; Galanthus, 895,003; Chionodoxas, 465,422; Ixias, 371,983; Eranthis, 152,787; and Fritillarias, 104,483.

I employ for it is peat and loam, using plenty of crocks, and I never on any account allow the roots to become pot-bound, as it is next to impossible to grow a large plant in a small pot. My largest specimen occupies a tub twenty inches wide and fifteen inches deep. I keep my plant growing on in this way for about twelve months, at the expiration of which it generally shows symptoms of blooming. At all events, it will flower as soon as it has strength enough, and the higher the culture, the stronger and finer will the bloom be. After blossoming, the same treatment is again pursued. The temperature I grow it in is from 57° to 75° in winter, and from 65° to 90° in summer. *J. Rust, Gard. Chron. December 28, 1850.*

Publication Received.—*Flower Scent*. By F. A. Hampton. Dulau and Co., 34, Margaret Street, W.1. Price 6s. net.

The Week's Work.

THE ORCHID HOUSES.

By J. COLLIER, Gardener to SIR JEREMIAH COLMAN, Bart.,
Gatton Park, Reigate.

Oncidium.—The distinct and somewhat scarce *Oncidium lanceanum* has always been considered a difficult plant to cultivate successfully, and healthy specimens are rarely seen in Orchid collections. There is a difficulty at all times in keeping the large, fleshy leaves free from spot disease, and when once the plant becomes affected with this complaint it is seldom restored to good health. During their period of rest the plants should be suspended in a light position near the roof-glass in a house with a temperature of about 60° and watered sparingly at the roots. New growths will soon be developing, and when young roots are seen to be pushing from the base of the young leaf, any of the plants that require more rooting space may be attended to. *O. splendens*, *O. pumilum*, *O. luridum*, and *O. pulvinatum* thrive under similar conditions to those afforded *O. lanceanum*. In re-potting these Orchids, press the compost firmly amongst the roots, filling the pan nearly to the rim. The rooting medium may consist of *Osmunda*-fibre and half-decayed Oak leaves in equal parts, with a little chopped Sphagnum-moss. Afford the roots but little water until they are well established, and the new leaf is well advanced.

Brazilian Oncidiums.—Such species *O. varicosum*, *O. crispum* and *O. Forbesii* that have recently passed out of flower should be afforded a season of rest by placing them in the *Odontoglossum* house near to the roof-glass and giving them but little water at the roots. They will be benefited by sprinkling them overhead by means of a fine rose can; this damping will greatly assist in plumping the pseudo-bulbs, that are somewhat shrivelled from the effects of flowering.

THE FLOWER GARDEN.

By W. AUTON, Gardener to VISCOUNT ELVEDEN,
Pyrford Court, Woking, Surrey.

Winter Colour.—Much cheerful colour may be obtained in winter by grouping a good selection of shrubs and small trees having bright-coloured bark, and amongst the most useful are the Dogwoods and Willows, both of which are of the easiest possible cultivation. For distant effect, planting should be carried out on a rather large scale, but excellent results may be obtained by massing bold groups of the scarlet, yellow, and orange barked Willows with the rich crimson Dogwood. Hard pruning should be practised, as the colour is always the most intense on the young shoots, but to prevent the loss of effect which would follow the cutting back of the whole group in one year a scheme of alternative group-planting should be adopted. By this means alternative groups may be pruned each year and the distant effect can always be kept intact. An additional advantage derived from practising this method is that the newly cut groups produce more intensely coloured wood, hence variation of colour is expanded and the beauty of the whole scheme enhanced. Willows and Dogwoods are usually associated with the lake or stream garden, for which they are eminently suitable, but they are equally valuable for positions away from the water, where reasonably moist conditions obtain. Several of the white-barked species of *Rubus* are also extremely beautiful, and large clumps of them growing in juxtaposition with dark-foliaged evergreens make striking winter pictures.

Evergreens.—The evergreens with variegated foliage constitute another class of plants which provide valuable material for winter colour, amongst which the golden forms excel. There are many excellent golden forms of *Cupressus*, *Juniperus*, *Retinospora*, *Thuja*, *Yew*, *Diplodappus*, *Euonymus*, *Elaeagnus*, *Holly*, *Ivy*,

Box and *Privet*, which provide a wealth of highly-coloured foliage of a permanent character. By using the Coniferous plants as a background, with a judicious grouping of the shrubs in the foreground, a highly effective winter colour garden may be produced which loses none of its brightness till new growth commences in the spring. Any necessary clipping or pruning of the shrubs should be done immediately before growth commences, and once they have grown to the desired size fairly hard cutting should be practised, as even if this is not necessary from the point of view of space it induces intensity of colour in the subsequent growth. Such a garden should not be heavily manured, indeed the semi-starvation which comes from age is also a factor in intensifying the colour.

Grey Garden in Winter.—Although the grey garden cannot compare with the gold garden for brightness in winter, the softness of tone and persistence of many of its occupants make it a strikingly beautiful quarter in winter. The handsome, glaucous foliage of the Yuccas and the bluish grey of the Rue stand out against the intense grey of the Cotton Lavender and *Stachys lanata*, while the glaucous foliage of the Pinks and dull grey of Lavender, Sage, and *Veronica pimeleoides* add charm to the picture and remain as beautiful in mid-winter as at midsummer.

PLANTS UNDER GLASS.

By F. J. CLARK, Gardener to Lt.-Col. SIR GEORGE
HOLFORD, Westonbirt, Tetbury, Gloucestershire.

Plumbago rosea.—Plants which have passed out of flower should be given less water at their roots, and, with a view to propagation later, they should be placed in a position calculated to ensure a thorough ripening of the growths, and at the same time afforded a partial rest in a temperature of about 50°. Remove the spent flower spikes only, deferring the cutting back of the plants until some few weeks before it is desired to procure cuttings. See that thrips do not infest the plants—a pest to which they are particularly subject.

Begonias.—Plants of the *Gloire de Lorraine* type, from which it is intended to procure cuttings later, should not be allowed to flower over too long a period. It is wise to select as stock plants a few of the more vigorous specimens; remove the flowers from them and set them aside from the rest of the batch. The plants should be partially rested, without, however, allowing them to become very dry at the roots. After a few weeks' rest, the plants may be partly cut back, afforded a little more water at the roots, and be frequently syringed to favour the formation of shoots from the base of the stem. In the case of treatment of the tuberous-rooted section of winter-flowering Begonias, after flowering, sufficient water may be afforded by means of the syringe, which, however, should be used frequently to spray the plants and the spaces round about them. If the plants be given much water at the roots it may cause the tubers to rot; on the other hand, they should not be completely dried off.

FRUITS UNDER GLASS.

By F. STREETER, Gardener to MAJOR ALBERT PAN,
Wormley Bury, Broxbourne, Herts.

Main Orchard Houses.—Continue to push forward the work of cleansing, pruning, training and top-dressing the trees in the various houses that all may be in readiness for starting by the first week in the New Year. The main object of these houses, which contain Apricots, Plums, Cherries, Peaches and Nectarines is to forward the season of these various subjects so as to have ripe fruits before the outside crops are ready. It will be found that many of the trees come into growth and fruit regularly each season with very little forcing. Maintain the temperature at 45° by night and 50° by day, allowing it to rise a little above 50° with the aid of sun heat. Close the houses about 1 o'clock for the first few weeks, then, as the sun's rays get stronger, gradually extend the time for closing the ventilators.

Early Pot Vines.—So soon as the buds of the early pot vines commence to swell, raise the temperature of the house to 50° at night and 55° by day. Spray the rods overhead twice daily with tepid water on fine mild days. Remove the weakest shoots not required for the crop so soon as they can be seen, leaving the strongest one to carry the bunch. Endeavour to cover the trellis with good, healthy foliage. Water the roots with the greatest care, for whilst it is fatal for the soil to become at all dry, it is equally harmful if it becomes sodden. When water is necessary, let the amount be sufficient to give the soil a thorough soaking.

HARDY FRUIT GARDEN.

By E. NEAL, Gardener to J. A. NIX, Esq., Tilgate,
Crawley, Sussex.

Results in 1925.—Taking the year through it has been a satisfactory one to the fruit grower. Apples in particular, which may be regarded as our most important hardy fruits, have been plentiful and good, although many varieties are not keeping extra well. This may be attributed to the hot weather in June and early in July hastening the development of the fruits too quickly. Plums and Damsons on standard trees bore heavy crops, and of good quality. Sweet Cherries were also satisfactory. The small fruits, including Gooseberries, Red Currants, White Currants, Raspberries and Strawberries gave heavy crops and of good quality. The Pear crop was very much below the average everywhere. Peaches, Nectarines, and Apricots also had very thin crops; Morello Cherries were only fair, and Black Currants not so good as usual. The prospects for 1926, judging by the fruit buds, are very promising. Even Apple trees that carried heavy crops this year are showing quite a lot of flower buds, but after the great strain of this year's crop we must not be too optimistic. Pears are showing a nice lot of flower buds; after taking a rest this year, and with a favourable season, there should be Pears in plenty in 1926. Plums may be included amongst those with a good prospect of flower buds.

Top-dressing Fruit Trees.—At the time of writing the weather is fairly open and suitable for top dressing fruit trees, either in orchards or the fruit garden, with bone meal or basic slag. The fertilisers should be distributed with a little judgement, according to how the trees have cropped this year. Trees that have cropped freely should receive the heavier dressing.

THE KITCHEN GARDEN.

By H. PRINCE, Reading.

A Retrospect.—The year 1925 has been a most satisfactory one from the point of view of the quantity of most kinds of vegetables. Practically the only failure in a number of districts was the crop of spring-sown Carrots; July-sown Carrots turned out very well. Two other crops not up to the usual standard in many districts were late Peas and late Celery, although some Celery I saw in the midlands recently, after 20° of frost, is excellent, and does not seem to have suffered to anything like the extent of the majority of the Celery crops in the Southern Counties. Winter Brassicas, notwithstanding the severe weather, are giving good results, and later batches have withstood the frosts well, beds of late Broccoli in particular. Leeks are good, and will furnish a welcome change through the winter. Onions were a good crop, although there was a difficulty in getting the bulbs stored in a nice, dry condition owing to the very wet weather at the time of harvesting.

The Seed Order.—This should be forwarded without delay, because so soon as Christmas is over many vegetable seeds, such as Tomatoes, Peas, French Beans, Onions, and Carrots, will need to be sown. It is a good plan to try a few of the newer varieties of vegetables each year, and test them with the older standard varieties. A diary of the season's work should be kept, and especially the dates of sowing of

the different kinds of vegetables and salads, carefully noting the dates when the first supplies from the different sowings are fit for use. District plays an important part in the growing of some vegetables, more especially in the case of Potatoes. Varieties that return bumper crops in some districts with ordinary cultivation give but poor results in others.

FOR NORTHERN GARDENERS.

By JAMES JEFFERY, Gardener to the EARL OF LONSDALE, Lowther Castle, Penrith, Westmoreland.

General Remarks.—During the present wintry weather examine the stored Dahlia tubers from time to time and remove any decayed parts. Tuberous-rooted Begonias should also be inspected for diseased parts, which should be cleansed and afterwards dusted with powdered lime or charcoal. Afford constant ventilation to alpine plants now plunged in frames and intended for spring planting; remove decaying foliage from these plants. Seed boxes for the earliest sowings should now be got ready, also the necessary soil, which should be placed in a dry, warm shed.

Forcing Strawberries.—The present is a suitable time for introducing the first batch of Strawberries into a moderately-heated house. Select good plants with well-matured crowns. Remove any decayed foliage, well cleanse the pots and examine the drainage of each. The plants should then be syringed with a weak solution of XLALL insecticide before introducing them to the house. Choose a position near to the roof-glass.

Winter Washes.—These may be applied to all fruit trees as the pruning is completed. A caustic solution is the most effective winter wash for removing eggs of insect pests and lichen. Choose a still, dry day for spraying.

Forced Asparagus.—Asparagus should be watered very carefully; use tepid water in which a little salt, at the rate of a table-spoonful in three gallons of water, has been dissolved. Seakale that was introduced to heat some time since will now be yielding good supplies. Crowns brought indoors now from time to time will respond more readily to heat than the earliest batch.

NOTES FROM GLASNEVIN.

BRACHYCHILUM Horsfieldii (Fig. 205), a Javanese plant belonging to the family Scitamineae, is allied to the *Hedychiums*, under which name, as well as *Alpinia*, it has been described by various authors. Mr. J. B. Baker drew attention to the plant in *Gard. Chron.* 1894, vol. I, p. 652, where he described the stem, leaves and inflorescence, but omitted reference to the fruit. The latter is conspicuous at present by reason of the bright orange colour of the fleshy capsule which is open, displaying the scarlet seeds. Cultivation of this plant is the same as for *Cannas*.

Gomphia Theophrasta (*Bot. Mag.*, t. 5642), belongs to the family Ochnaceae, and is a native of Brazil. It forms a handsome stove evergreen shrub, with leaves a foot long, tapered at both ends, and with finely-toothed margins. The inflorescence is a large, branched panicle composed of many flowers in small clusters. The bright, golden-yellow petals contrast beautifully with the dark green leaves, and stand out conspicuously among other evergreens at this season. When allowed to grow unchecked the plant will reach a height of six feet or more and is rather sparingly branched, with the leave clustering towards the ends of the shoots. *Gomphia olivaeformis* (*Bot. Mag.*, t. 5262), also met with in cultivation, has smaller leaves and a more compact inflorescence with rather larger flowers.

Plants of the family Bromeliaceae are not extensively cultivated nowadays except in botanic gardens. The fact that most of them require considerable heat and moisture is against them, but many have beautiful leaves

and some brilliant flowers as well. *Tillandsia Lindenii*, a member of this Natural Order, never fails to excite interest when in flower, especially if six or eight plants are grouped together. The leaves form a rosette and are broadest at the base, tapering to a fine point, and distinctly channelled above. As they grow outwards they become curved downwards, giving the plant a decidedly graceful appearance, even when not in flower. The spike arises from the centre of the rosette of leaves, and is clothed with overlapping, bright-rose bracts, which alone are of great beauty, but when accompanied by several, comparatively large, violet-blue flowers, the effect is striking. The plant grows freely in a compost of fibrous peat and sharp sand, with good drainage to allow for frequent

years but has made slow progress, though it improved considerably during the past warm summer.

Among shrubs with variegated foliage some are by no means beautiful, and others have been planted to excess. It may be argued with truth that any shrub or tree with abnormally coloured foliage becomes an eyesore when used injudiciously, but *Rhamnus Alaternus variegata* is rarely met with in any abundance. The leaves have a conspicuous white margin, creating a bright, silvery appearance, as seen from a short distance away. This variety is not quite hardy, at least at Glasnevin, where in the open it has succumbed time and again to our bitterly cold east winds in the spring. Planted in a sunny shrubbery, however, backed



FIG. 205.—BRACHYCHILUM HORSFIELDII IN FRUIT.

waterings during summer. A stove or warm Orchid house is quite suitable for this and many other handsome Bromeliads.

Few of the larger-growing forest trees are remarkable for the colour of their young shoots in winter. In *Acer macrophyllum aureum*, however, the shoots of the previous summer are bright yellow, contrasting sharply with those a year old. In the collection of Maples at Glasnevin this variety is at once noticeable by reason of the comparatively stout branches, each completed by a foot or more of yellow wood formed during the past summer. The type is represented here by a good specimen over fifty feet tall, and between five feet and six feet in girth. It is one of the handsomest of the Maples, and well worth planting in parks and large pleasure grounds where the large, deeply-cut leaves would be much admired. Several other Maples have ornamental wood, notably *A. pennsylvanicum*, with beautifully striated branches, a condition also found in *A. microthum* and *A. rubrerve*. *A. pennsylvanicum* var. *erythrocladum* has young shoot of a brilliant crimson, and, given a good specimen would be singularly attractive. A small plant has been in cultivation here for a good many

by a high wall, it has flourished, and is now nine to ten feet high, six feet through, and furnished from base to summit. In habit it resembles a well-grown *Pittosporum* of the type of the plant known in gardens as *P. Mayii*. Cuttings root readily in autumn, and even quite small plants are distinctly ornamental in pots.

In moving about among trees and shrubs in winter, the finest coloured evergreens are particularly noticeable. *Juniperus horizontalis* is a prostrate species, known sometimes as *J. hudsonica*. The leaves, of two kinds, as is common in the genus, are scale-like and awl-shaped, but the charm of the plant lies in the beautiful glaucous-blue colour which shows up to great advantage at this season. A rapid grower, a single plant will soon cover a considerable area, sending its branches along the ground, over rocks, or spreading over a dry bank. Mr. Hornibrook, in his useful book *Dwarf and Slow-growing Conifers*, states that, unlike many Junipers, this species is found on non-calcareous soil, but here the presence of lime is no drawback. The plant is a native of North America, where apparently it is widely spread. *J. W. Besant.*

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Letters for Publication as well as specimens of plants for naming, should be addressed to the EDITORS, 5, Tavistock Street, Covent Garden, London. Communications should be WRITTEN ON ONE SIDE ONLY OF THE PAPER, sent as early in the week as possible, and duly signed by the writer. If desired, the signature will not be printed, but kept as a guarantee of good faith.

Illustrations.—The Editors will be glad to receive and to select photographs or drawings suitable for reproduction, of gardens, or of remarkable flowers, trees, etc., but they cannot be responsible for loss or injury.

THE GARDEN IN ANTIQUITY.*

XVII.—GARNERING THE GLEANINGS.

IT is fitting that the work of the year among the gardens of antiquity should close with a few remarks in which may be summarized the results of my studies. To keep to the phraseology of the garden, we gather up the fruits. We find, as a result, that in antiquity the garden, orchard, park or pleasure ground was a square enclosure. Square as a rule, in order that it might the more readily be divided into equal plots for watering. The Bible speaks of "the watered garden," and ancient, pictorial and descriptive allusions show that special attention was paid to the regular supply of moisture. Frequently there was a fountain whose play not only gave beauty to the enclosure but enabled fish and water plants to be added to its attractions, while the overflow kept the water courses regularly supplied with water. A square enclosure: there being sometimes mud embankments, at others brick or stone walls, and yet again hedges of spinous and thorny shrubs, Cacti and other plants as a protection against intruders, whether in the form of jackals—"the little foxes which spoil the Grapes"—and other animals, or thieves in the form of boys and men. Hence all the old words which were in use, such as the English word garden and its relatives in many tongues, the Persian *paradise*, the Chinese, Semitic and others, all are derived from words meaning to surround, enclose or protect. In Sir John Maundeville's representation of the Garden of Eden there is a pinnacled wall with a tiny chapel among the pinnacles. The chapel is a strange anachronism, as the garden had only a couple of occupants, but the idea is a pleasing one none the less.

It has been asserted by some writers that a characteristic of the ancient garden was the solitary tree, and this peculiarity was found in Eden. The statement may or may not be true. In the *Revelation* we find the new Eden with its solitary tree, the tree of life (*Rev.* xxii, 2), clearly with reference to the Earthly Paradise. But the tree of life, if it stood alone in the midst of the garden, was not, in one sense, solitary, since it had many companions. "Out

of the ground (of the garden which he had planted) made the Lord God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil." (*Genesis* ii, 9). It must be granted that every nation of antiquity seems to have had its sacred tree or tree of life. To this reference seems to be made by the Wise Man when, speaking of Wisdom, he says "She is a tree of life to them that lay hold upon her: and happy is everyone that retaineth her" (*Prov.* iii, 18). The tree was in many instances selected because of its much-prized fruit—the Date Palm, the Fig, the Banana, the Olive, the Orange, Apple or Vine. But if the Yggdrasil of the Scandinavians was an Ash, it suggests that at times the tree was selected because it could be used for purposes of protection in warfare. In either case, to the early man such trees were of supreme importance, and a well-furnished garden would have its trees yielding fruit and its "life preservers," or "Penang Lawyers" as well.

It is difficult to get away from the idea that the garden in antiquity was as much a pleasure resort as a preserve for the growth of edible fruits. It was not only that Adam might find useful employment in dressing and keeping the garden that he was placed in Eden. The idea suggested by the pleasing tradition is that God intended man to be happy. The narrator had heard of the pleasure grounds of priests, the parks and paradises of Persian monarchs, in which they passed their time in agreeable pursuits, and pressing the idea into service, he showed that man was from the first placed in circumstances which were conducive to enjoyment. How far the suggestion is correct I am not prepared to say, but some writers maintain that, while we make our gardens for pleasure in this life, the ancient Egyptian made his "that after death his soul might come out of the tomb in the cool of the evening to enjoy its sweetness." Certainly the Egyptians, like most eastern peoples in olden times, thought much of the future life, believed in immortality, and made every possible provision for its pleasant enjoyment, and it is easy to see that such a faith and hope might react beneficially upon the believer. If the garden was to be the rendezvous of the discarnate spirit it must be made as alluring and delightful as possible.

Such a thought would further lead to the development of the mystical ideas and symbolism so closely associated with gardens and their produce in early times. In passing, little attention has been paid to the plant and flower-lore which is to be found in every nation of antiquity. Some flowers and fruits were specially cultivated because they were the favourites of the gods. We have seen how the idea might arise. The fruits which were most perfect and delicious would be most acceptable at the temples. The fragrant barks and woods and the perfumed blossoms would counteract the smells associated with the sacrifices, and so incense and garlands and bouquets would be held in high esteem. Thus ritual and reverence played their part in making the garden of service.

Almost all the peoples of antiquity who have left us records of their gardens were inhabitants of either tropical or sub-tropical regions. They resided in lands where the heat is often oppressive, and hence, along with their fountains and streams and groves for coolness and shade, we have also the pavilion and place of retirement. The summer house was an indispensable adjunct, and the people who have lived in the East will recall the many beautiful structures to be found there in park and garden and pleasure ground. Architecture is thus indebted to the garden lover in more ways than one. The builders of temples made free use of flowers and plants in pillar and capital and ornament, thereby giving encouragement to others to produce the choicest trees and blooms, and thus horticulture and architecture reacted the one upon the other.

Perhaps, from the utilitarian standpoint our debt to antiquity is greatest in relation to the vast number of fruits and flowers which the industry of the old-time gardener has secured to posterity.

A large percentage of our choicest flowers

and most valued fruits has come to us from the East. We have seen, as we have considered the Rose and Tulip, the Orange and Damson, that their names are foreign. The terms were borrowed with the things themselves, and in their use we are transported to Turkey or Persia, to Palestine or Assyria, and led to reflect how true it is that none of us liveth to himself, and the eye cannot say to the ear I have no need of thee. What would England be if depleted of all the lovely flowers, luscious fruits, useful and ornamental trees which foreign gardeners and foresters from of old have sent to our shores?

With these simple reflections I bid my readers Good-bye. But since I have only touched upon a few of the subjects I hoped to treat, I crave permission of the Editor to follow up this series with another in the New Year on "Gardens Classical and Legendary." *Hilderic Friend.*

CHRISTMAS FRUITS AND CONDIMENTS.

EVERY lover of horticulture, as he sits down to table on Christmas day, will find himself surrounded by reminders of the great debt we owe to foreign lands. Not only would the famous pudding be impossible, but the dessert would be missing, and even the beverages would be lacking. It is well to develop native industries, but there are many things, which we are unable to produce in this country, upon which we have come to depend as necessities, and not merely regard as luxuries. If we begin with the breakfast table, we find ourselves transported in thought to Africa, Arabia, India, Assam, Malaya or India. One or other of these countries will have sent to us our delicious coffee, nourishing cocoa, non-intoxicating tea, and the sugar which most of us need to make these palatable.

We can successfully grow a variety of small fruits—Strawberries, Gooseberries, Currants, and the like—from which to manufacture jellies and preserves, but for the morning meal marmalade or preserved ginger are more piquant, and have come to be regarded as indispensable to the well-appointed table. We have our own Holly, and we grow a certain amount of Mistletoe, but for much of the latter we are dependent on our neighbours across the Channel. How woe-begone our gardens look at Christmas, and, if we have not the good fortune to possess some glass, where are we to find our table decorations? But, even if our conservatories are rich in blossoms, have not the plants come to us originally from Japan and China, India Africa or South America? We are indebted to almost every country under heaven for the beautiful blooms with which we make our tables bright.

If, again, we look at the dessert, the wine and Walnuts which, figuratively, if not literally, make Christmas the season of good cheer, how great is our debt to the foreign market. Oranges, Lemons, Grapes, Pomegranates, Bananas, Figs, Dates, to mention those which come first to the mind, all come from abroad, as do many or most of those fruits which are preserved and crystallised. Where should we be when we come to the most popular dish of the day if we could not draw on the boundless and richly varied resources of other lands, brought to our doors by the mercantile marine? The vines of Greece and other Mediterranean countries—now assisted by our colonial brethren—supply us with the necessary Raisins, Currants and Sultanias, as well as with the choice Muscatels which we use as dessert along with the imported Almond. The peel of Citron, Orange and Lemon, which imparts so appetising a flavour, is the gift of more sunny climes than ours, as are also the necessary Cinnamon and Cloves and spices, which the clever housewife knows how to deal out in just proportion.

Save the roast beef and Potatoes, the turkey or goose, and a few vegetables, we have on our tables on Christmas Day hardly a delicacy which is not directly or indirectly foreign.

The names of our greens, even, such as Brussels

* Previous articles on "The Garden in Antiquity" by the Rev. Hilderic Friend appeared in our issues for February 7; February 21; March 12; April 11; April 25; May 30; June 20; July 25; August 8; August 22; September 12; September 26; October 17; October 31; November 14; and November 28, 1925.

Sprouts and Savoy reminds us of our debt. We may pride ourselves on growing the Cox's Orange Pippin and Blenheim Pippin Apples, but many imported Apples and Pears will be eaten, while French Plums, Prunes, and many other fruits, will be introduced to make up for the deficiency of our home supply, and give pleasure to those whose taste for fruits is keen and wholesome.

This debt to other races is not by any means a new one, and as the historian passes in review our commercial connections with distant lands a number of very interesting facts is brought to light. Take, for example, the first thing in which we indulge on this festive day—the familiar cup of tea. Not only has the name itself come to us, along with the leaf, from the Celestial Empire, but its form tells us that it did not originally reach us from the famous city of Canton, where the leaf and plant is known as Cha, pronounced with an aspirate or explosion of the breath. Yet the picture-symbol is the same all over the land. When I visited Amoy, half a century ago, I found that the people there spoke of "Tay," just as my great grandmother did, half a hundred years earlier. Tea was originally Tay, and the change in the vowel may be seen in other words such as Holy Grail for Greal, and the like. Pepys, in his famous Diary, under September 28, 1660, spells it "Tee."

Unless we happen to have some Li-Ches or Lung-ngans for dessert, I do not remember any other Chinese word which we shall be using on Christmas Day, but our table will hardly be complete without ginger in some form or other. The cook may have grated some because she prefers it to the ground ginger which is liable to adulteration; a friend may have sent us a welcome box of crystallised, or our own purses may be equal to the purchase of a pot of preserved ginger; but in any case, China may here again be regarded as our friend. Opposite my house in Canton was the famous factory for preserved ginger, from which alone, for many years, our supply of this wholesome and appetising condiment was derived. As is well-known, ginger is the underground growth of a foreign plant, the name of which comes to us through the Latin from a Sanskrit word which literally means "horn-shaped."

If we turn to the Orange, we find that the name reached us ultimately from the Persian. We have a way of playing with words which begin with a certain letter, sometimes dropping it when we ought to pronounce it, at other times foisting it on to words to which it does not belong. Instead of newt the country people will say effet, and for napron, an apron. So we get Orange from Narange, or Naranj, which is allied to the Persian word for Pomegranate, viz., Nār. Similarly, the Lemon is so named from the Persian Limun-Citron. Citron, however, comes to us through the French from the Latin *citrus*—Orange tree. Thus every language has made its contribution to the enlargement and enrichment of our own. We borrow from the Hebrew our name for Cinnamon, while the word "spice" has a curious history. It comes from the much-used Latin word *species*, which from the more general meaning of "kind" later acquired that of a drug and so of spice.

Currants, as everyone knows, are the small Grapes of Corinth, whence they were at first named Corinths, or "Raysyns of Corouns," while Raisins were so named from the Grapes growing in clusters, or racemes.

Those who are curious as to the origin and history of plant names may find much pleasure and instruction in tracing the connection between two other fruits which are inseparable from our festive board—the Nutmeg and the Muscatel. The word "musk" is the connecting link between them, and in trying to recover its history we find ourselves travelling from France to Italy, from Italy to Persia, and from Persia to India and the Far East. But here we must draw to a close. To follow up all the lines of thought suggested by the flowers and fruits, spices and condiments found on our tables at Christmas would involve a tour round the world, and this it is impossible for us to take to-day, delightful as it would prove. *Hilderic Friend.*

CRINDONNA OR AMARCRINUM?

In *The Gardeners' Chronicle* of November 21 (p. 411), Mr. Coutts contributed an article on an interesting bigeneric hybrid, Amaryllidaceous plant raised in America. The hybrid he refers to is exactly like the plant I described in *The Gardeners' Chronicle* in 1921 (vol. LXIX., p. 32), under the name of Crindonna Memoria Corsii. The parentage is the same, namely, *Crinum Moorei* ♂ × *Amaryllis Belladonna* ♀ and the characters of both the plants and their flowers are identical. I have grown my hybrid for fifteen years. Mr. Coutts gives the name of the hybrid as *Amarcrinum Howardii*. Is this correct?

Concerning the generic name, I pointed out

In the near future I hope to describe another Crindonna, also a *Lycordonna* (*Lycoris* ♂ *Amaryllis Belladonna* ♀). *Dr. A. Ragionieri, Castello, Italy.*

[Unless priority can be claimed rightfully for the generic title of *Amarcrinum*, Dr. Ragionieri's name of Crindonna must stand, according to the usual conditions attaching to first publication. Eds.]

FLORISTS' FLOWERS.

CHRYSANTHEMUMS.

AFTER Chrysanthemums have finished flowering, the plants should be cut down to within five inches or six inches of the pot. There are



FIG. 206.—CHRYSANTHEMUM ZENITH.

N.C.S. First-Class Certificate, December 14; B.H.S. Award of Merit, December 15.

(see p. 482).

at the time, now nearly five years ago, that it was analagous with the hybrid title of *Brunsdonna* used for many years for the offspring of *Brunsvigia* × *Amaryllis Belladonna*. This nomenclature is still maintained by botanists and horticulturists, without any trouble or confusion, therefore I think that the name Crindonna should also be maintained for the *Crinum* × *Amaryllis Belladonna* hybrid.

Concerning the specific name of *Memoria Corsii*, this disappears under Mr. Coutts's nomenclature, but I can only accept another when someone demonstrates that I was not the first person to describe Crindonna Memoria Corsii. For the specific as well as the generic name I claim right of priority.

many methods of keeping these old plants for stock purposes. The best method, I consider, is to turn the stools out of the pots, removing the crocks and a little of the top soil, as well as any weak and drawn cuttings, as these are of no value. The stools should then be placed in a cool pit or frame, filling in between them with a light compost of leaf-soil and loam. Admit plenty of air on favourable days, and to keep the cuttings free from insects the structure should be fumigated occasionally. Old stools treated in this way will produce strong, sturdy cuttings, and for the production of fine exhibition blooms, it is a matter of prime importance to have the best possible cuttings. If cool pits are not available, the stools should

be allowed to remain in their pots, placing them in a light position in any cool house.

The best cuttings are those growing from the base and not from the stem, and should be about three inches long, not too sappy, and cut with a sharp knife below a joint. There can be no hard and fast rule as to the proper time to root the cuttings. Varieties that need stopping early to secure the crown bud, and also those varieties which must be grown to flower from an early crown bud, should be inserted in December or early January. Popular varieties of to-day, such as Mrs. G. Monro, Mrs. M. Sargent, Dawn of Day, Mrs. Peter Murray, Mrs. Algernon Davis and its sports produce (in my experience), much finer blooms and of richer colour when rooted in February and March. It often happens that if cuttings of these varieties are rooted early, the crown bud appears too soon for November shows, and from an exhibition point of view they are useless.

It is not necessary to root cuttings singly in small pots. The method I adopt is to insert three cuttings in a large, sixty-sized pot, in a compost consisting of equal parts of loam, leaf-soil and silver sand. The pots are then placed in a propagating case, with an inch or so of coal ash to stand the pots on; this latter must always be kept moist. Glass being placed on the case, the cuttings will not flag, but keep fresh until rooted. The glass should be removed for an hour or two every morning and stood on edge to dry. It is also an excellent practice to dust the cuttings with flowers of sulphur before inserting them, as this, to a large extent, prevents rust and mildew—two dreaded diseases of the Chrysanthemum.

A high temperature is not necessary for the cuttings, and it must be always borne in mind that the hardier the young plants are grown the better will be the results; 45° to 50° is ample for the cuttings. In three or four weeks' time the cuttings should be rooted, and may gradually receive more air until the glass can be removed altogether. If a gentle spraying of warm water is given once or twice a day the young plants will keep quite fresh. It is not wise to pot them too soon; let them get well-rooted first. If potted carefully they will not feel the check of being divided. A suitably sized pot for the first potting is a large sixty. A suitable compost for this potting consists of two parts fibrous loam, one part leaf-soil and one part old horse manure, with the addition of some sharp silver sand. For convenience in potting, pass the compost through a coarse meshed sieve. After potting, place the young plants in a cool house near the light, but care must be taken not to expose them to cold draughts. The soil should receive a good watering directly after potting, and in due course strong, healthy plants should develop. *E. H. Pearce, Long Sutton.*

ALPINE GARDEN.

EPIMEDIUM PINNATUM.

This species must always be considered among the best of the Barrenworts for, unlike so many of its kind, the foliage remains fresh and green all the winter, only disappearing after the young leaves have developed. The leaves, with pinnate, glossy and somewhat horny leaflets, at once suggest an affinity with the Berberidaceae, to which genus the Epimediums belong, and the plant makes a bold and dense clump up to two feet high. The leafage is, moreover, very valuable in protecting the tender young leaves, which come up among it like Fern fronds, from keen spring winds, and it is not less serviceable in regard to the blossoms. The latter soon follow or accompany the growth of the new leaves, and they are among the first flowers of spring, delicate sprays of nodding, bright yellow stars. There appears to be at least two forms of *E. pinnatum*; *elegans* has taller, more upright spires of blossom in a warm yellow, and *E. ochroleucum* is a form with much paler inflorescences.

SAPONARIA LUTEA.

MANY years ago, allured by the prospect of having a yellow Saponaria, or Soapwort, with the free-flowering attractions of *S. ocyroides*, or the neater *S. caespitosa*, I purchased a plant of *S. lutea*, whose catalogued description appeared to present high possibilities. Nor did the appearance of the plant before it flowered belie the pleasurable anticipations I had formed. It was decidedly pleasing in its green carpet, or rather mat, of narrow green foliage, so that I looked hopefully forward to its blooming. But, as too frequently happens, when one acquires a new plant of unknown quality, the disappointment was all the greater when the blossoms opened. The flower heads were scantily borne, and the thickly-set flowers in these were of a lustreless pale yellow of the tint generally known as "straw." Even the dark centre formed by the blackish anthers did little to brighten the ground colour by their contrast.

The plant is, I believe, quite hardy, although some doubt this, and I cannot understand why its hardiness seems questioned. It loves a well-drained spot in a sunny position, and should be planted firmly in an open soil of loam, leaf-mould, sand and grit. It is said to dislike lime, but I am disposed to discount this opinion.

S. lutea appears to be very limited in its distribution in nature, being principally found in crevices between the boulders of Mont Cenis and Mont Rosa. *S. Arnott.*

ORCHID NOTES AND GLEANINGS.

LYCASTE.

With the exception of *Lycaste Skinneri*, not many members of this genus have found much favour with cultivators of Orchids: although there are several which possess some qualities which should merit extended culture. Being plants of easy growth—they may be grown in a cool house—they are at the present time in considerable demand especially those varieties which produce flowers of a bright colour. *Lycaste Skinneri* is one of the most beautiful and free-flowering Orchids known: it produces its flowers during the winter rendering it at that season peculiarly attractive and interesting.

The individual flowers last a considerable time in full beauty, and, having fairly long stalks, they are most useful when cut for decorations. *L. Skinneri* may be used as a pot plant for indoor decoration. It is recorded that one specimen has produced so many as fifty blooms, and so many as twenty flowers have been produced from a single pseudo-bulb.

There is considerable colour variation in a batch of this species, ranging from the pure white *L. Skinneri alba* to the large and dark *L. S. Mrs. Hamilton Smith*.

It is not of any particular variety that I wish to refer, as for general usefulness the typical flowers are as good as those of the rarest variety.

Plants potted in a similar compost to that used for *Cypripediums* will succeed in any glass-house, the temperature of which does not fall below 50°. They should receive abundance of water whilst making their growth; in fact, they should never be allowed to become dry at the roots even while at rest. The whole of the members of the genus will succeed under the same conditions, with some slight modifications; which, under careful observation, will soon be obvious to the cultivator. There are varieties which are adaptable for providing cut flowers, for they have good stalks, and last in a cut state a considerable time. Those best adapted to the purpose are *L. Skinneri* (the best), *L. cruenta*, *L. Deppei*, *L. gigantea*, *L. plana* and *L. Schilleriana*.

Besides those *Lycastes* mentioned, there are others which are interesting from the peculiar formation or colour of their flowers, such as *L. lasioglossa* and *L. Mooreana*: in fact, the whole family is interesting, although, owing to their short stalks, the flowers of some are not adapted for cut flower purposes. The hybrid *Lycastes* have not only the many good qualities of *Lycaste Skinneri* which is a parent in the majority of cases, but they are in most instances a great improvement on the original species.

They comprise such useful and well-known Orchids as *L. Balliae*, *L. hybrida*, *L. Janet Ross*, *L. Mary Gratrix* and *L. Tunstallii*, all of which are worth a place even in a select collection of Orchids. *J. T. B.*

CALANTHES FROM NETHER WARDEN.

FLOWERS of a fine new strain of winter-flowering *Calanthes* are sent by Mr. W. J. Stables, gardener to Clive Cookson, Esq., Nether Warden, Hexham. They are beautiful examples of two crosses with the showy *C. Angela* (*Sedeni* × *Chapmanii*)—which flowered in 1908 from a strain which developed very fine white forms—and the showy *C. Ruby* (*Sedeni* × *vestita rubro-oculata*), *C. Oakwood Ruby*, and others in which the whole flower showed the ruby colour of the lip of the splendid form of *C. vestita* used for hybridising in the Oakwood collection.

CALANTHE HEXHAM GEM (*Angela* × *Bryan*) is represented by twenty-four flowers, the greater part of which have the enlarged *C. vestita* appearance, being white, the broad lip having a rich crimson base. Six of the flowers are coloured in shades of rosy-crimson, approaching *C. Angela*, a flower of which is sent.

C. HEXHAM PET (*Angela* × *Kenneth*) has large and finely-formed flowers, white, with a light shade of yellow, the disc of the lip being ruby-purple.

There will be variation in colour in these crosses, but a well-marked feature in all is the broad and finely-displayed lip. *J. O'B.*

NEW HYBRID ORCHIDS.

(Continued from November 28, p. 427) *

Name.	Parentage.	Exhibitor.
Brasso-Cattleya Mrs. Joseph Mauda ...	B.-C. Mrs. J. Leemann × C. Venus ...	J. Mauda & Co.
Brasso-Laelio-Cattleya Cytheria ...	B.-C. Mrs. J. Leemann × B.-L.-C. The Baroness ...	J. & A. McBean.
Brasso-Laelio-Cattleya Ursula ...	L.-C. Sargon × B. Digbyana ...	Sir G. Holford
Calanthe Hexham Gem ...	Angela × Bryan ...	C. Cookson, Esq.
Calanthe Hexham Pet ...	Angela × Kenneth ...	C. Cookson, Esq.
Cattleya Fairy ...	labiata × Antelope ...	C. J. Lucas, Esq.
Cattleya Helga ...	Dowiana × Antelope ...	Charlesworth & Co.
Cattleya Marquise ...	Boadicea × Dupreana ...	Stuart Low & Co.
Cattleya Memoria Maria Bauer ...	Bertil × Warneri ...	Mr. P. Bauer.
Cypripedium Baron Opols ...	The Baron × Germaine Opols ...	S. Gratrix, Esq.
Cypripedium Baron Renfrew ...	Royal George × Gaston Buller ...	S. Gratrix, Esq.
Cypripedium Goldilocks ...	Insigne Sanderæ × Golden Fleece ...	Sir G. Holford
Cypripedium Locarno ...	Albert Fisher × Christopher Grand Duke Nicholas ...	Black & Flory.
Cypripedium Renfrewshire Lass ...	Pyramus × Lancashire Lass ...	R. Paterson, Esq.
Laelio-Cattleya Aureole ...	C. Schröderæ × L.-C. Yellow Prince ...	Charlesworth & Co.
Laelio-Cattleya British Queen ...	C. Luddemanniana × L.-C. Britannia ...	Sir G. Holford.
Laelio-Cattleya Caliph ...	L. anceps × C. Suzanne Hye ...	Charlesworth & Co.
Laelio-Cattleya Cleo ...	L.-C. Soulangue × C. labiata ...	Stuart Low & Co.
Laelio-Cattleya Cleops ...	C. Fabia × L.-C. Colmaniana ...	Sanders.
Laelio-Cattleya Coreen ...	C. Suzanne Hye × L.-C. Bella ...	Charlesworth & Co.
Laelio-Cattleya Peter ...	C. Pectersii × L.-C. Vera ...	Black & Flory.
Laelio-Cattleya Peter The Great ...	C. Pectersii × L.-C. Britannia ...	Sir G. Holford.
Laelio-Cattleya Petronella ...	C. Dowiana × L.-C. Spalatro ...	Sir G. Holford.
Laelio-Cattleya Senlac ...	C. Clotho × L.-C. Bella ...	Charlesworth & Co.
Odontoglossum Jamesianum ...	crispum × St. James ...	J. & A. McBean.
Odontoglossum Princess Royal ...	Verulamium × Magali Sander ...	H. T. Pitt, Esq.
Sophro-Laelio-Cattleya Junia ...	C. Portia × S.-L.-C. Thisbe ...	Stuart Low & Co.

* *Odontoglossum Mercurio* (p. 427) = *O. St. Hilda*.

TREES AND SHRUBS.

CISTUS LAURIFOLIUS.

THOUGH it is the hardest (and hardy enough to grow almost anywhere in these islands), of the Cistuses, and a very beautiful species, the subject of this note is by no means a common shrub. In fact, it is probably rarer in gardens generally than *C. cyprius*, of which it is reputed to be one of the parents.

C. laurifolius may not be such a graceful shrub as the hybrid mentioned, but it has a distinct attractiveness of its own. The somewhat stiff, upright habit, the branches rising to about six feet, and the large, dull, grey-green leaves, sometimes three inches long by half as wide, are features quite unlike those of any other Rock Rose. In common with that of many other species the foliage and young wood of *C. laurifolius* exudes a gummy secretion with a particularly refreshing aroma.

The flowering period of this species extends from early June to the end of August, and the large, pure white blossoms, up to three inches across, are produced in upright, loose panicles which stand very effectively well away from the branch. Seeds are yielded in abundance, and these germinate readily, producing plants generally true to type. Here we sometimes find self-sown seedlings about the paths of the open woodland in which the shrubs are grouped. *C. laurifolius*, like many of its kind, is not a long-lived shrub, and old plants are apt to become gaunt and unshapely. It will thrive in the poorest and driest of soils. *J.*

RHODODENDRON NOBLEANUM.

It is always a pleasure to see the first flowers of this beautiful plant showing colour, and on visiting our earliest specimen on December 12, I was agreeably pleased to find half-a-dozen buds opening. The flowers of this hybrid Rhododendron are very beautiful, and opening, as they do here, about Christmas time, when few flowers are to be found outside, the plants are all the more appreciated. It is always a source of wonder to me that great stretches of pleasure grounds throughout the country should be allowed to become over-run with *R. ponticum*, when the finer varieties, which might be such a glorious feature from December to July, are comparatively neglected. I am aware, of course, that every soil and situation does not suit Rhododendrons, but where they will grow freely it is advisable to root out the all-pervading *R. ponticum* and try the better sorts. As a covert-forming plant, *R. ponticum* has no equal to my knowledge, and it will sow itself and grow luxuriantly in sun or shade, making almost impenetrable thickets, but it should not be allowed to occupy prominent positions, which might be advantageously filled with a succession of the better sorts. Some varieties of *R. Nobleanum* are not so early as the plant referred to above, but they all produce their flowers before the middle of February, so may truthfully be referred to as winter-flowering.

THREE WINTER-FLOWERING SHRUBS.

THERE is no more cheerful sight in the garden in winter than a plant of *Jasminum nudiflorum* in bloom. The starry, yellow flowers light up in and reflect the winter's sunshine, while their perfume is delightful. It is a plant of peculiar charm; it grows in almost any position, and is as much at home in the cottage garden, as in the more spacious gardens of the nobility. Its long shoots root readily where they touch the soil, and suckers spring up freely round the base, both being easy methods of increasing the stock.

Viburnum Tinus, the *Laurustinus*, produces its clusters of white flowers in the greatest profusion during winter, and their beauty is enhanced by the dark, evergreen foliage. This shrub grows to a height of ten feet or more, and forms a nicely rounded specimen furnished with shoots to the ground. In mid-winter, when covered

with flowers, it is a most inspiring sight, and forms a strong link in the chain of succession amongst our flowering shrubs. It may be readily increased by cuttings taken in autumn, or by layers, the latter being the easier method, as its lower branches rest on the soil, and often layer themselves. *Viburnum Tinus* has been cultivated in Britain for more than 300 years, but it is not so widely and extensively grown as it should be, as it is perfectly hardy, and infinitely more to be desired than the commoner Laurels which abound in most gardens.

Arbutus Unedo, the Strawberry Tree, is a shrub which flowers in winter, and while its white and pink blossoms are pretty, its interest is deepened by the fact that its Strawberry-like fruits are at their best at the time of its flowering. The dark, evergreen foliage is also attractive in winter. This small tree is perfectly hardy, and has come safely through some very severe winters in various parts of the country. It grows to a height of thirty feet or more in the South-west of Ireland, but twenty feet or so is about the average height of established specimens in this country. The fact that, unlike Rhododendrons and other members of the Ericaceae, *Arbutus Unedo* does not object to lime in the soil, and thrives where most other Ericaceous plants refuse to grow, is a great point in its favour.

CYDONIA JAPONICA.

THIS plant, more familiarly known as *Pyrus japonica*, is again showing flower, although, as yet, only a foretaste of its possibilities: it is an old and well-known plant, but is still worthy of a sheltered and sunny wall where its scarlet flowers begin to show during December, and continue in increasing numbers until March, or even later. It is quite hardy, and may be freely planted in the open, either as specimens, groups, or hedges; but naturally, under open conditions, it does not flower so early as when given the shelter of a wall. Many very fine varieties have been raised, ranging from white and pink to deep blood-red and crimson, and while finding room for a number of these, I am not sure that any of them has the persistent-flowering habit of the parent. *A. T. Harrison.*

GALL-MIDGES.

THE title of "gall midges" has been given to the Cecidomyiidae, a family of two-winged flies (Diptera), on account of the gall-producing or gall-living habits of many of its members. All the "gall-midges" are small, frail, midge-like flies, but many of them do serious damage to the world's crops; for example, the well-known Hessian fly has been estimated frequently to cause a twenty per cent. to seventy-five per cent. loss of the Wheat crop in the United States of America. The gall midges are well-represented in Great Britain, there being about 500 species already recorded. In spite of the fact that they are termed "gall-midges," not all of them either produce galls or live in them. The family may be readily separated into two large groups: (1) those whose larvae or grubs live on plants (phytophagous), and (2) those whose larvae live on animals (zoophagous).

I.—Those whose larvae live on plants may be divided into (a) those causing galls, (b) those living in galls, but not causing them, and (c) those not living in galls nor causing them. These three divisions embrace by far the largest number of gall-midges.

(a) The true gall causers seem to attack every part of a plant; there are those producing galls in the flowers, the fruit, on the leaves, shoots, tendrils and even on the root. One of the best known galls produced in fruit is the one caused by the Pear midge (*Cecidomyia pyrivora*, Riley) which causes young Pears to remain small and irregular in shape. Another common gall is that caused by the Blackberry Stem Gall Midge (*Lasioptera*

rubi, Heeg.) on Blackberry and Raspberry stems, both wild and cultivated.

(b) The gall-living, but not gall-causing, midges generally use different types of galls: those made by beetles, Cynipids, flies (Muscidae) and other gall-midges (Cecidomyiidae). Only one midge has been recorded as living in beetle galls in England, and very few live in fly (Muscid) galls, but several live in galls produced by Cynipids on Oak. These gall-midges must be clearly separated from those which feed predaceously on the inhabitants of various galls.

(c) The midges which live on plants but do not cause galls nor live in galls, comprise the second largest group of the gall-midge family, after the gall-causers. The Wheat midge (*Catarinia tritici*, Kirby) lives in the florets of Wheat, Rye and Barley, while other midges live in the pappus of Thistles; another midge (*Perrisia papaveris*, Winn.) lives in the seed-capsules of wild Poppy; the dreaded Hessian fly (*Mayetiola destructor*, Say) is a sheath dweller. Other midges feed on resin, in decaying vegetable matter, in old birds' nests, in dead wood, in mosses, and on fungi. Still another group of gall-midges feed on the excreta of various fly or beetle larvae, under bark. There is also a very interesting group of midges whose larvae feed on rusts and moulds on various plants and trees such as Thistles, Hops and Poplar. All these must be grouped together owing to their habit of feeding on vegetable matter, whether it is dead or alive.

II.—The midges whose larvae feed on animals may be sub-divided conveniently into those which are internal parasites, i.e., feed on some animal from the inside, and those which are external parasites or predaceous, feeding on some animal from the outside. There is only one example of internal parasitism among gall-midges found in England, and that is known by the name *Endaphis perfidus*, Kieff., owing to its habit of living inside the aphid or greenfly which lives on the leaves of Sycamore.

The predaceous midges, a group which from the evolutionary point of view is most interesting, may be sub-divided into three main sub-groups: (a) those whose larvae feed on the larvae or grubs of other two-winged flies; (b) those whose larvae feed on mites (Acari), and (c) those whose larvae feed on greenfly (Aphidoidea), suckers (Psyllidae) and scale-insects (Coccidae).

(a) The midges which feed on other fly larvae frequently are to be found living in company with other gall-midges larvae on which they are predaceous. The genus *Lestodiplosis* contains some of these cannibalistic midges.

(b) Those which feed on greenfly, scale insects, etc., are less numerous, but may be found to be more important; for example, there is a greenfly very common on Hops, and there is a predaceous midge which feeds on this greenfly, devouring about twenty individuals within an hour. Theoretically, if there were sufficient numbers of the predaceous midge the greenfly attacks might be checked. But owing to up-to-date methods of spraying and dusting, the greenfly can be controlled more certainly and readily, although at a greater cost.

(c) The mite-eating midges are not at all numerous, but there is one which may attract the attention of greenhouse owners, and feeds on red spider (*Tetranychus telarius*), which is to be found on the leaves of various fruit trees, e.g., Peach.

All these different habits which have been outlined above point to a very high degree of specialisation, and also intimate connection between the midge and the plant or animal on which it lives.

Amongst other insects which cause galls on plants may be mentioned the wasp-like flies (Hymenoptera), moths (Lepidoptera), two-winged flies other than the gall-midges (Diptera), beetles (Coleoptera), and bugs (Homoptera). Mites (Acari) and eelworms (Nematoda, fam. Anguillidae) also produce galls on various plants. *H. F. Barnes, B.A., Research Scholar, Ministry of Agriculture, S.E. Agricultural College, Wye, Kent.*

MESEMBRYANTHEMUM.

(Continued from page 404).

C. Pearsoni var. minor, N. E. Br.—Exactly like the type but smaller in all its parts. Growth 6-7½ lines high and 4½-7½ lines in diameter. Calyx 4-lobed; tube 2-2½ lines long, exserted as well as often part of the ovary; lobes ½ line long, ovate or oblong, obtuse. Corolla 6½-8½ lines in diameter; petals 20-25, about 3-4 lines long, and ¾-1½ line broad; staminodes 1-1½ lines long. Style about ½ line long; stigmas 4, about ½ line long.

In my previous account of this plant I unfortunately mistook and described it for the plant named *M. Wettsteinii* by Berger, which it so closely resembles, that, in the absence of a figure showing structural details of the flower, I certainly thought it was the same species. But having afterwards obtained a plant of the original *M. Wettsteinii*, and having now had both plants in flower together, I find that they represent two distinct species. As my previous description (with the exception of the mention of dots on the growths) was entirely made from Pearson's plant, I shall give, later, a description of the true *C. Wettsteinii*.

The variety *minor* I am quite unable to distinguish from typical *C. Pearsonii* by any character except size.

16.—C. Purpusii, N. E. Br.—On account of its earlier publication this is a change of name for *C. albertense*, N. E. Br., in *Gard. Chron.*, 1922, v. 71, p. 261, which must now stand as a synonym of the above; other synonyms are *M. Purpusii*, Schwantes in *Monatssch. f. Kakt.*, March 1920, p. 36, with fig.; *M. minusculum*, Schwantes in *Monatssch. f. Kakt.*, March 1920, p. 40, with fig., not of N. E. Brown; *M. familiare*, Schwantes in *Monatssch. f. Kakt.*, September, 1922, p. 129; *M. malleoliforme*, Schwantes in *Monatssch. f. Kakt.*, May 1920, p. 77, with fig.; *M. albertense*, N. E. Br., in *Journ. Linn. Soc. Bot.*, v. 45, p. 92 (July 1920). Prince Albert Division: Prince Albert Karoo, Marloth 11,271!

All the above names, in my opinion, undoubtedly belong to one and the same species. They were all collected in the Karoo near Prince Albert Road, by Dr. R. Marloth and others. Mr. Schwantes has obligingly sent to me portions of his type plants of *M. Purpusii* and *M. familiare* (syn. *M. minusculum*, Schwantes not of N. E. Brown), and these certainly represent only one species and are identical with *C. albertense*, N. E. Br. I have not seen *M. malleoliforme*, which Mr. Schwantes informs me has died out of cultivation, but there is no character whatever in the description or figure that distinguishes it from *C. Purpusii*. Mr. Schwantes considered it different on account of its larger size, but I have growths upon my plant of *C. Purpusii* (*C. albertense*) as large as those figured for *M. malleoliforme* and others smaller than the smallest figured for *M. Purpusii*, all on the same individual! Dr. Marloth has also informed me that he collected and sent only one species from Prince Albert Road, but that different individuals varied somewhat in markings and appearance, exactly as I find them to do in other species, as, for example, in *C. Nevillei*, *C. placitum*, *C. truncatellum*, etc.

It may be well to point out that Mr. Schwantes describes this and other species as having the surface covered with very minute papillae. This is misleading, for I find—from all the species that he has sent to me that are so described—that he merely means the slightly convex surfaces of the epidermal-cells as seen when very highly magnified, and not papillae visible to the eye and as ordinarily understood by botanists and gardeners. I should describe the surface of all the plants above mentioned as being smooth.

14.—C. saxetanum, N. E. Br., in *The Gardeners' Chronicle*, 1922, v. 71, p. 261. Add to the synonymy *Mesembryanthemum Boehmerianum*, Dc. in *Zeitschr. f. Sukkulentkn.*,

December 1923, p. 92, and October 1924, p. 181.

15b.—C. spirale, N. E. Br.—Growths 4½-6½ lines broad and 3-5 lines thick, obovate, slightly and very obtusely ridged across the breadth of the somewhat convex top (type E.), orifice 2-2½ lines long, depressed, tightly closed, with a dimple at each end, and usually it is not outlined with dots or a dark margin as in most species; surface smooth, glabrous, of a greyish-green or sub-glaucous-green, rather thickly sprinkled with separate small dots of a darker green, scarcely arranged in any pattern, but usually the larger or flowering growths have a line of separate dots arranged in the form of two arches on each side of the orifice and another line of them along the ridge. Ovary included in the orifice. Calyx 6-7-lobed, reddish; tube 2 lines long; lobes 1 line long, obtuse. Corolla 5-9 lines in diameter, expanding at night, scentless; tube 3½-4 lines long; petals 30-35, in 1-2 series, 3-5 lines long, linear-filiform, specially arranged, whitish. Stamens many, in about 3 series, nearly all exserted and the longer considerably so; anthers whitish. Style very short, about ½ line; stigmas 6, about 1 line long, filiform, pallid.

Prince Albert Division: near Prince Albert Road, Pillans 3,822!

Described from a living plant sent to me by Mr. N. S. Pillans. The spiral arrangement of the petals in the fully expanded flower, as well as the markings on the growths, clearly distinguishes this from allied species. N. E. Brown.

(To be continued).

NOTICES OF BOOKS.

Native Orchids of Britain.*

It was almost inevitable that a new book on Orchids would be written after the numerous discussions continued in *The Journal of Botany* between 1918 and 1924, and previous to that in the *Report of the Botanical Society and Exchange Club of the British Isles*. One would have expected that this would have been done by one or other of the botanists engaged in the discussion. On the contrary, the author states his book is by "an amateur for amateurs." The style of his book recalls Sole's *Menthae Britannicae*, but on a much smaller scale, with a full page reproduction of a photograph facing a brief description, and some short paragraphs relating to each species. The descriptions relate chiefly to the prevailing colours of the flowers and leaves, the stature of the plant and its habitats. The photographs are excellent in their way in giving a general impression of the form of the spike, the spacing of the flowers, and the form of the leaves, when any are present; but such pictures are not always happy in showing the exact form of the lip, on which the distinction of the recently described species very largely depends. *Orchis maculata* of Linnaeus was segregated into *Orchis ericetorum*, Linton, and *O. Fuchsii*, Druce. Since then *O. elodes*, Grisebach, has been considered an older name for *O. ericetorum* and *O. maculatum*, in part. This latter is also coupled with *O. Fuchsii* in part. Indeed, Linnaeus's description in the *Species Plantarum* would admit both these species. The author clings to *O. maculata* for *O. Fuchsii*. His photograph of the latter gives a good idea of the form of the lip, but that of *O. elodes* is not at all clear; and it would have helped amateurs, if he had given a line drawing of the lip.

His description of the lip of *O. maculata* (*O. Fuchsii*) is not nearly so good as that of Drs. T. and T. A. Stephenson, whom he quotes, and whose descriptions are devoid of technicality. The author anticipates a disappointment to botanists, owing to his omission of sectional drawings, but his book would have been improved by a drawing of the lip of *Orchis elodes*, *O. maculata*, *O. incarnata*, *O. purpurella*, *O.*

*Native Orchids of Britain. By C. B. Tahourdin, 80, Manor Road, Wallington, Surrey. To be had of the author, or H. R. Grubb, Ltd., Printers, Croydon. Price 5s. Post free, 5s. 4d.

praetermissa, and *O. latifolia*, even in helping amateurs, because most of the colours run through all of them, whereas the form is relatively constant, apart from the flowers of hybrids.

Evidently the author has been giving the subject of Orchids close attention through all the recent changes, and if he does not always adopt the up-to-date names given by the botanists, he uses them as synonyms, especially the specific names on p. xiv. Such genera as *Orchis*, *Habenaria* and *Epipactis* have undergone great changes during the last two or three decades, and it is to be hoped that they have reached some degree of stability. The author makes an appeal to all and sundry to avoid digging up and so helping to exterminate rare Orchids, and dissuades them from any attempt to cultivate them in the garden, because the experiment is doomed to failure. The paper printing and editing are excellent, only one misspelling being noted.

VEGETABLE GARDEN.

SALSIFY OR VEGETABLE OYSTER.

(*Tragopogon porrifolius*).

It is not often that vegetables are compared to denizens of the sea, but the comparison is reasonably justified in the present case. Doubtless this is one of the reasons why Salsify is such a popular vegetable in the United States, where oysters, being plentiful and reasonably cheap, especially in the eastern States, a strong liking for the oyster flavour has been developed. France also has a share in these natural advantages, hence the Salsify is equally popular in that country, where also, to a much greater extent than in Britain, not only the root is eaten, but the young flower stems are served up in the spring, like Asparagus, and the young and tender leaves make a very acceptable addition to the mixed salad—a food highly esteemed by our neighbours, and eaten with evident relish by British travellers visiting that country. It were better for the public health if a larger supply of this easily-grown, wholesome and nutritious vegetable was on hand, when in season, in our own markets.

Although, by those who esteem the root only, it is treated as an annual, the plant is really a hardy biennial, and the leafage and flower stems can only be enjoyed in the second year, at which time the root is certainly not at its best.

Here it may very properly be mentioned that those who are unable to eat Parsnips will find a pleasant, nutritious and digestible substitute in this and its kindred vegetable *Scorzonera*.

Although W. Drummond does not quote Salsify in his 1754 catalogue, Justice in the *Scot's Gardiner* devotes a paragraph to its culture and use, thus: "Be sure that your soil has been well-dug, that their long-topt roots may run easily down and swell well. In October they will be fit for use, that is boil them first, then slice them and fry them with butter and flour, and they will eat well and are very wholesome." To the advice of Justice may be added the following recipes taken from Burpee's *Vegetable Cook Book*: "Scrape and cut one quart Salsify into small pieces; put in cold water so it will not discolor. Drain, cover with boiling water, boil slowly forty-five minutes, drain and cover with one cup cream sauce (recipe follows). Put in baking dish, sprinkle with bread crumbs and put in hot oven ten minutes." Mrs. Scott's recipe, for cream sauce, good for any vegetable one wishes to serve creamed, is as follows:—"Take one quart of vegetables, which is usually enough for four persons, with a correctly balanced meal. One table-spoon butter, one table-spoon flour half-teaspoon salt and white pepper, one teaspoon grated onion (or nutmeg), one cup cold milk. Melt butter in shallow saucepan over fire, remove, add flour and mix until smooth, return to fire and add cold milk, stirring slowly all the time, add salt, pepper and flavouring, and boil three minutes; this will not have to be strained."

Salsify also makes good mock-oyster soup. According to *The Vegetable Garden*, Salsify was only brought into cultivation at a comparatively recent date, but in the *Herbal* of Dodonaeus, 1554, I find the following uses and virtues ascribed to the Goat's Beard, one of the various names applied to Salsify. "The rootes of Goat's Beard boyled and drunken aswageth paines, and cureth prickings and unpurtunes of the side. The said root also is very good to be used in meates and salades. To be taken as the rootes of Rampions." Two hundred years after Dodonaeus's *Herbal* was published, Phillip Miller quoted several varieties of Tragopogon from the *Pinax* of Caspar Bauhin, 1671, No. 2 being *T. pratense luteum*, and No. 3 being *T. purpureo coeruleum pomi folio quod ortici vulgo*, and stated "this is the Goat's Beard of a purple colour and a Leek leaf, commonly called Salsify. Sorts Nos. 2 and 3 are eaten plant and root."

In this connection the following incident may possibly interest some of the country readers of *The Gardeners' Chronicle*. Many years ago, when enjoying a very tastily cooked hare at the table of one of our Essex seed growers (who, by-the-way, always sent in with his other crops a few pounds of splendid Salsify seeds), I learned that the presence of the hare on my host's table was due to its intense love of the Salsify plant. The grower, knowing this, made a practice of sowing a plot in a field near his house every year, and the temptation being too strong to be resisted, a few hares found their way to his table, and incidentally, the seeds saved paid the rent of the plot. Any reader desirous of emulating the strategy of this grower had better look up the game laws before adopting his methods of "catching the hare."

Viewing the plant from the historical standpoint, there is little to add to what has been already mentioned. Dodonaeus in 1554, figures the ordinary blue-flowered and a yellow-flowered variety under the Brabant name "Boexbaert oft. Josephsbloumen," the first named variety having the best root. The Latin name is given as *Herci barba* and *Coma*; the Grecian *Tetrapogon* and *Come*; the Italian, according to Matthioli, as *Sassefries*; the Engelsche as *Buckesbearde*. In the Supplement to the *Herbal*, 1618, it is stated that the Engelsche have named it *Buckesbearde*, *Goatsbearde* and *Joseph's Floure*, and that Lobel had named it *Indiense Salsifie*. Mention is also made of Theophrastus and Dioscorides, to whom the plant, as a native of Europe, was evidently well-known, but the reference is obscure. Mention is also made of a red flowered variety grown in France and Italy, and in the latter country a white-flowered variety was found in the Apennines.

During the recent war, a big advertising effort was made, particularly in the midland counties, to boom this vegetable as an addition to the food supplies of the nation, and, happily, there was an abundant supply of seed available. It took on very well at first, and the seed was rapidly cleared out, but since Potatoes have become available once more, the demand for Salsify has fallen off, probably because the cooking is easier.

With the solitary exception of the Mammoth Sandwich Island variety, which is reputed to have come to us by way of America, and is said by Mr. Burpee to be double the size of the old variety, it is to French botanists and growers we are indebted for such improvements as have been made.

These have aimed at the shortening of the root with a corresponding increase in its width, combined with larger and more tender foliage and a smoother skin. M. L. Clause, of Bretigny, is the only firm I know that offers a Giant Russian Rose-flowered variety. Everybody claims the right to describe Salsify as The Oyster Plant. Other names are given to their selections by different merchants, but they all amount to practically the same thing, so that it is not necessary to set them out in detail; suffice it to say that while great improvements have undoubtedly already been made, the end is not yet. S. B. Dicks.

HOME CORRESPONDENCE.

Perpetual-flowering Carnations.—On p. 455, Mr. Allwood advocates a change of stock and soil to combat diseases in Perpetual-flowering Carnations. I am well aware of the advantage of a change of stock, but at the same time, by rigidly selecting the plants, and consigning all weakly ones to the rubbish heap, I have kept Carnations healthy and free from disease for years in the various gardens under my care. More often than not excess of fire-heat and insufficient ventilation when trying to produce the maximum of blooms in mid-winter are the causes which weaken the plants. They then become a prey to red spider, which I have noted generally precedes stem rot. Mr. Allwood does not approve of growers in different parts of the country exchanging cuttings; obviously that would be bad for trade from a nurseryman's point of view, and he states that neither would give away his best. The same remark applies equally to nurserymen who grow for market. If plants are bought from them it is not likely that they are going to send out all their best plants and retain the secondary ones for themselves. Further on Mr. Allwood refers to farmers buying their seed Potatoes; such stocks usually come from Scotland or Ireland, or at the nearest, Lincolnshire, not usually from a neighbouring farmer. A good farmer would not consider it much of a change from Hayward's Heath to Wivelsfield! *Grigor Roy, Stoke d'Abernon Manor Gardens, Cobham, Surrey.*

Problems of Fruiting.—On page 392, Mr. Weston observes that, as fruit growers, we imagine we sometimes play a tremendous part in bringing about a crop of fruit. In my opinion we do, or we may do, by a system of careful and intelligent culture, such as recommended by Mr. Paice (on the same page), with whose remarks I entirely agree. There will be failures occasionally with outdoor fruits, owing to climatic influences, but if these occur we have the satisfaction of knowing the fault is not ours, provided the same persistence is maintained as practised in the culture of fruits under glass. With reference to the question "Why does the Peach, Nectarine and Vine bear consistently under glass?" I should say that the reason is, that under good culture every encouragement is given, combined with the fact that these crops are under complete control during the stages of rest and growth, and being allowed to carry only a crop they can bring to perfection each season. Cherry trees, in Kent invariably bloom well, because the Cherry, being more prolific than the Apple or Pear, is usually well-furnished with fruit spurs year after year, especially in the case of varieties grown for market in those parts of Kent where they seem to revel in the soil peculiar to the district. May not the reason for the Morello being such a consistent cropper on north and east walls be that the blossoming period is retarded until the flowers are safe from frost? Bush fruits, again, if under good culture, are naturally prolific. The Gooseberry usually has a fair amount of leafage to protect the blossom; the Red Currant, not having that protection, does occasionally get caught by a late frost, resulting in the loss of the fruits at the top of the bush. Respecting the Holly, the fact of last year's berries remaining till late in the spring and summer of this year may have prevented the trees from making a fruitful growth this season; if they did make good growth and flowered well the climatic conditions at the time may have been against a good set. I am of opinion that if flowers are removed from Rhododendrons and Azaleas so soon as faded, and a suitable stimulant is given the trees, the chances are in favour of a good show of blossom the following season. I have seen specimen plants of Azalea indica shown year after year in perfect condition at York Gala, in June. So soon as possible after the show every bloom is removed carefully, the plants gently forced into growth, and abundantly sprayed until buds have formed when they are hardened off and put outside for six or eight weeks before being housed for the winter. J. R. A.

SOCIETIES.

DUMFRIES AND DISTRICT HORTICULTURAL.

IN view of the unsatisfactory results of the past year's working and a falling off of interest for some years, the cessation of the operations of this Society appears to be likely to take place. The Society was established many years ago to take up the work of the old Dumfries and Galloway Horticultural Society, and carried on for a long time with considerable success. Even during the war years, when many shows were discontinued, the Society held non-competitive exhibitions, devoting the proceeds to war charities, and ran with efficiency a scheme for the supply of vegetables to the fleet. Within the past few years, some lack of support from trade and other exhibitors, and from the general public, has been apparent.

With a view to enlisting a better attendance of the public a two-days' show was held in 1925, but the results have proved disappointing, and the annual report showed a considerable loss on the show which had to be met by drawing on the reserves, which are now greatly depleted. At the recent annual meeting matters came to a crisis owing to the decision of the president, Mr. A. W. M'Alister, and the secretary, Miss Young not to accept office again. Both of these office bearers have rendered admirable assistance and no effort on their part has been wanting. It was resolved to adjourn the meeting in view of the small attendance, and at the adjourned one, held about a week ago, the prospects were so discouraging that no progress could be made, and it was ultimately resolved to leave the position in the hands of the non-retiring members of the committee.

THE ORCHID CLUB.

THERE was an extensive display of well-flowered plants at the meeting of the Orchid Club, held on December 11, including many choice varieties of *Cypripedium*, *Odontoglossum*, and *Cymbidium*, among the latter being a magnificently-flowered plant of *C. Doris*, with five full spikes, from the collection of A. T. Cussons, Esq.

DIPLOMAS OF MERIT.

Cypripedium Corsair, Holford's var.—A large, elegant flower with a shapely dorsal sepal, the greater part being of rich crimson colour, with a pale margin. The petals and lip are well-proportioned, yellow, stained with brown.

Cypripedium Noel Hardy (nites *Leeanum* var. *Becktoniae* × *Nirvana*).—A large, well-displayed and finely-proportioned flower. The dorsal sepal is three-and-a-quarter inches across, white, with a small, pale, green luna, and a few radiating reddish spots. The petals and lip are pale yellowish green. Both from Dr. CRAVEN MOORE.

CERTIFICATE OF CULTURAL COMMENDATION.

Cymbidium Doris.—The specimen was in a nine-inch pot, and carried five full spikes with a total of 151 flowers.

GROUPS.

Sir WILLIAM THORN (gr. Mr. R. Williams) showed a large and effective group composed of *Cypripediums*, including good examples of *C. Corsair*, *C. Dreadnought*, *C. John Hartley*, *C. Monialis*, and others. A. T. CUSSENS, Esq. (gr. Mr. A. Dalgleish), had an elegant group of *Cymbidiums* together with a selection of *Cypripediums*. The former consisted of various varieties of *C. Doris*, and the latter, among others, of *C. Memoria F. M. Ogilvie*, *C. The Premier*, and the richly coloured *C. Pyralis*. Dr. CRAVEN MOORE (gr. Mr. W. Gilden), exhibited a very showy group of choice *Cypripediums* and *Odontoglossums*, among which special mention may be made of *Cypripedium Corsair*, Holford's var., *C. Roundhead*, *C. Glorita* var. *Purity*, and *C. Major Hanbury Carlisle*. B. J. BECKTON, Esq. (gr. Mr. W. A. Stewart), showed *Cypripedium Warrior*, Green's var., *C. Sanctus*, Bedford's var. and others.

READING AND DISTRICT GARDENERS'.

THE concluding meeting of the autumn session was held in the Abbey Hall, on Monday, December 14, and was presided over by Mr. A. W. Gower.

The subject for discussion was "Soils," and this was introduced by Mr. H. H. Cook, University College Gardens, Shinfield, who handled his subject in a way that could be followed easily. He described the various soils and their formation, fully explained the difference between soil and sub-soil, texture of soil, percolation of water, surface-tension, evaporation, drainage, temperature, aspect, soil bacteria, retention of manures by soil, concluding with fertility and condition. A very lengthy and instructive discussion followed, in which Messrs. Gower, Young, Terry, Cox, Townsend, Nugent, Priest, Moulton Fulker, Reeves, Carter, Kirby, and others took part.

In the competition for three dishes of Potatoes, the entries were not so numerous as usual, but, fortunately, some fine tubers were shown. The first prize including the *Gardening Illustrated* Bronze Medal, was won by Mr. F. J. GREEN, The Gardens, Aldermaston Court, who had a specially fine dish of The Bishop; the second prize was won by Mr. A. H. FULKER, The Gardens, Elmhurst, Reading, and the third by Mr. A. E. KIRBY, Amity Road, Reading.

In the non-competitive section, Mr. E. ILES, Brighton Road, Reading, exhibited several varieties of Apples grown on an allotment, to which the judges drew special attention.

NATIONAL CHRYSANTHEMUM.

At the concluding meeting of this Society's Floral Committee, held at the Royal Horticultural Society's Hall, Westminster, on Monday, December 14, there was a goodly display of new, late-flowering Chrysanthemums. Indeed, the feature of this and the previous meeting has been the increasing number and high quality of late-flowering varieties. The following awards were made:—

FIRST-CLASS CERTIFICATE.

Omega. II. 2 b.—An incurving Japanese variety of good size and substance. The loosely incurving florets are amber, with a reddish bronze suffusion on the inner surface. Shown by Mr. H. SHOESMITH, jun., Woking.

Phryne. II. 1 b.—A reflexing Japanese variety of medium decorative size (Fig. 204, p. 493). The colour is pink, and the long, drooping florets give the flower a very distinct and elegant appearance. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Bianca. II. 1 b.—A decorative variety of flattish, Japanese form. The florets are regular and of fine substance, suggesting that the flowers will travel well when packed. The colour is a pleasing shade of bronzy chestnut. Shown by Messrs. CRAGG, HARRISON AND CRAGG.

Zenith. V. 2 a.—This handsome single variety (Fig. 206 p. 497) is particularly effective at this season of the year. The flowers are of medium size, the broad florets making up a rounded, sturdy, long-lasting bloom. The colour has been described as terra-cotta over a yellow base, but the official description gives it as bright coppery orange. There is a narrow yellow zone around the central disc. Shown by Messrs. KEITH LUXFORD AND CO.

Incomparable. V. 2 a.—This is a large, single variety with several rows of narrow, reddish-purple florets. A white zone surrounds the yellow disc. Shown by Messrs. KEITH LUXFORD AND CO.

CATALOGUES RECEIVED.

Seeds.

DICKSONS SEEDS, LTD., Chester.
SUTTON AND SONS, Reading.
J. PEEB AND SON, West Norwood, S.E. 27.
DICKSON AND ROBINSON, Cathedral Street, Manchester.
E. WEBB AND SONS (STOURBRIDGE), LTD., Stourbridge.

Foreign.

E. SANDER, The Nurseries, Tornesch, near Hamburg, Germany.—Fruit, Rose, and forest trees. (Wholesale).

Obituary.

Mrs. W. Crump.—We regret to record the death of Mrs. Crump, wife of Mr. William Crump, V.M.H., at Oakridge, Malvern Link, on December 15, in her eighty-first year. The funeral took place at Madresfield Church, on Saturday, December 19, when many old friends attended. Our readers will remember that Mr. Crump was at Madresfield Gardens for over thirty years, retiring seven years ago, and will join with us in sympathy with him in his great sorrow. Mr. and Mrs. Crump celebrated their golden wedding four years ago.

Suzuki, Hamakichi.—We regret to announce the death, on December 17, in Yokohama, of Mr. Hamakichi Suzuki, the president of the Yokohama Nursery Co., Ltd., and one of the foremost horticulturists in Japan. He was the son of the founder of the company, and well-known to many members of the trade, as he had visited America, England and the Continent on several occasions. Mr. Suzuki's knowledge of plants was very wide, especially those of Japanese and Chinese origin, and he frequently accompanied Mr. E. H. Wilson and other visitors to Japan on their plant-hunting expeditions. He is succeeded by a younger brother, who studied several years in English and American nurseries.

Walker, Alfred O., F.L.S.—We regret to learn of the death, at Ulcombe Place, Maidstone, on the 16th inst., of Alfred O. Walker, Esq., F.L.S., at the advanced age of ninety-three years. The deceased gentleman was a keen horticulturist, and numbered among his personal friends such great gardeners of bygone days as Sir F. Crisp, Rev. Charles Woolley Dodd and Mr. Harpur Crewe, to mention only a few. He was a frequent correspondent to *The Gardeners' Chronicle*, his last communication having reference to one of his favourite plants, *Chiranthus mutabilis*, the true stock of which he had grown for many years.

ANSWERS TO CORRESPONDENTS.

GOLDEN EUONYMUS AND REVERSION. C. M. It is not quite clear whether you mean *Euonymus japonicus aureus*, or *E. japonicus ovatus aureus*. The former has a large golden blotch in the centre of the leaf, and is named *E. japonicus medio-pictus aureus* in some nursery lists. The other is less hardy, and sometimes gets injured by frost. The golden variegation of this plant is irregular. Sometimes numbers of leaves on a shoot are wholly golden yellow, and fairly often there are branches with all of the leaves golden yellow. Attempts have been made in gardens to get this variety of a uniform golden yellow, but such bushes refuse to thrive, and gradually dwindle away, because there is so little chlorophyll (leaf-green colouring matter) in the leaves. The variegation of both varieties may be regulated in the same way. Quite early in the life of a variegated, rooted cutting a green shoot may appear, and before it grows very long, it should be pinched, that is, the point only should be removed, preserving a few of the green leaves. If the green shoot were allowed to grow, it would soon become so strong that the whole bush would be green in a year or two. The stopping of the green shoots gives a stimulus to the variegated ones, which then take the lead. Young bushes should be watched, and gone over occasionally to pinch the green shoots during the growing season. As the bushes gain strength they will grow more rapidly and become large, with variegation over the whole surface. Any green shoots that arise can then be wholly removed from the variety with a central golden blotch; but a few green leaves should be preserved on *E. japonicus ovatus aureus*.

NAMES OF FRUIT. X. Y. 1, not recognised, probably Tower of Glammis; 2, Claygate

Pearmain; 3, Bramley's Seedling; 4, Dume-low's Seedling; 5, Emperor Alexander; 6, The Queen. A. T. S. Black Foxwhelp. C. H. G. 1, Bramley's Seedling; 2, Round Winter Nonesuch; 3, Niton House; 4, not recognised. E. B. 1, Roundway's Magnum Bonum; 2, Dume-low's Seedling (syn. Wellington); 3, Dutch Mignonne. A. S. 1, Gascoyne's Scarlet; 2, Wealthy; 3, Ribston Pippin; 4, Shepherd's Fame; 5, Lane's Prince Albert; 6, Norfolk Beauty; 7, Cullen. J. M. 1, Nanny; 2, Baxter's Pearmain. R. A. 1, Queen; 2, Adams's Pearmain; 3, Cox's Orange Pippin; 4, Mabbot's Pearmain; 5, Winter Majetin; 6, Golden Noble; 7, Api Gros; 8, Col. Vaughan; 9, Tower of Glammis; 10, Lewis's Incomparable; 11, Wyken Pippin; 12, Norfolk Beefing. J. J. K. 2, 9 and 11, decayed; 3, Yorkshire Beauty; 6, Worcester Pearmain; 7, Warner's King; 10, Lemon Pippin; 16, Dume-low's Seedling (syn. Wellington); 17, Mère de Ménage; 18, Small's Admirable; 19, Cox's Pomona; 21, Scarlet Golden Pippin; 22, Lord Burghley; 23, Sam Young; 24, Manx Codlin.

NAME OF PLANTS. M. A. G. *Cotoneaster frigidula*. R. A. R. *Spiranthes autumnalis* (Lady's Tresses); this probably came in the potting material.

PNCRATIUM MACULATUM (?) W. B. There is no such species as *Pancratium maculatum*, so there must be a mistake somewhere. Possibly *C. maritimum* is meant. This is a native of the Mediterranean regions, and is nearly hardy in the south and west of England, when planted out at the foot of a warm wall, especially in front of a warm house. Generally, however, it requires greenhouse treatment, and grows quite well in any good potting compost.

VINE BORDER. I. I. Drainage is one of the most important operations in the formation of a vine border, and it is better to take all ordinary precautions at the first, rather than to run any risk of failure after several years have elapsed. Coke cinders, if large enough, would provide suitable drainage material, especially if a dressing of old lime rubble is placed on the top. The finer lime rubble will prevent the soil from being washed down amongst the lower drainage material. Proper provision should be made to carry off the surplus water. A well-drained border is not only drier, but warmer, than a water-logged, or badly drained one.

Communications Received.—E. J. M.—A. J. S.—C. B.—W. B. G.—A. S.—W. H.—H. C. J., India.—W.—R. & Co.—W. F. & Co.—L. G., Brussels.—W. A.—Ambitious.—C. A. B.—A. G. P.

NEW INVENTIONS.

It is very encouraging for the outlook of better trade to note that the Patent Applications for 1925 are about 33,000, showing a large increase on 1924, closely approaching the "boom" year of 1920, which was the highest on record.

Messrs. Rayner and Co., the Chancery Lane Patent Agents, state that while the Motor trade has been particularly favoured with new inventions and designs, the record of activity still remains with the youthful industry of "Wireless."

A marked feature of the year's Patents is the attention paid to the subject of advertising; showing clearly that new ideas are being sought for in this art which is so valuable to the success of modern business. In aircraft also, some notable improvements have occurred, particularly in airship designs, and important commercial developments are bound to ensue in this direction.

Traders and merchants are everywhere securing special Trade Marks to protect their individual trade, not only in Great Britain but in the Colonies and foreign countries, and there are clear indications of the awakening of British enterprise both at home and abroad.

MARKETS.

COVENT GARDEN, Monday, December 21st, 1925.

Plants in Pots, etc.; Average Wholesale Prices.
(All 48's except where otherwise stated).

	s. d. s. d.		s. d. s. d.
Adiantum		Erica gracilis	
cuneatum	10 0-12 0	48's per doz.	24 0-30 0
—elegans	10 0-12 0	—nivalis, 48's,	
Aralia Sieboldii	9 0-10 0	per doz.	24 0-30 0
Araucarias, per		above varieties	
doz.	30 0-42 0	in 60's, per	
Asparagus plu-		doz.	12 0-15 0
mosus	12 0-18 0	—in Thumbs,	
—Sprengeri	12 0-18 0	per doz.	9 0-10 0
Aspidistra, green	36 0-60 0		
Asplenium, per		Marguerites, 48's	
doz.	12 0-18 0	per doz.	18 0-21 0
—32's	24 0-30 0		
—nidus	12 0-15 0	Nephrolepis in	
Cacti, per tray		variety	12 0-18 0
—12's, 15's	5 0-7 0	—32's	24 0-30 0
Chrysanthemums, pot			
grown, in variety,		Palms, Kentia	30 0-48 0
48's, per doz.	15 0-24 0	—60's	15 0-18 0
Crotons, per doz.	30 0-45 0		
Cyclamens, 48's		Pteris, in variety	10 0-15 0
in variety, per		—large 60's	5 0-6 0
doz.	24 0-30 0	—small	4 0-5 0
Cyrtomium	10 0-25 0	—72's per tray	2 6-3 0
Erica hyemalis		of 15's	
—48's, per doz.	24 0-30 0	Roman Hyacinth.	
—60's, per doz.	15 0-18 0	on bulbs, per	
		doz.	4 6-5 0
		Solanums, 48's,	
		per doz.	15 0-18 0

Cut Flowers, etc.: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Adiantum deco-		French Flowers	
rum, doz. bun.	15 0-18 0	—Narcissus	
cuneatum, per		Paper White,	
doz. bun.	10 0-12 0	per doz. bun.	9 0-10 0
Arums (Richard-		—Narcissus	
ias) per doz.	10 0-15 0	Soliel d'Or,	
Asparagus plu-		per doz. bun.	12 0-15 0
mosus, per		—Parma Violets,	
bun., long	2 0-3 0	per bun.	8 0-9 0
trails, 6's,		—Ranunculus,	
med. sprays	1 6-2 6	scarlet, per	
short	0 9-1 3	doz. bun.	12 6-15 0
—Sprengeri, per		—carmine, per	
bun.	0 9-1 3	doz. bun.	12 0-15 0
—long sprays...	1 6-2 0	—orange, per	
—med.	1 0-1 6	doz. bun.	24 0-30 0
—short	0 4-1 0	—Chillies, red	
Bouvardia,		and yellow,	
white, per		per pad	15 0-18 0
doz. bun.	15 0-18 0	—Solanum	
Camellias, white		berries, per	
per box, 12's	3 6-4 6	pad	15 0-18 0
Carnations, per		Gardenias, per	
doz. blooms...	7 6-9 0	box, 12's, 18's	
Chrysanthemums		Heather, white,	
white, large		per doz. bun.	10 0-12 0
blooms, per		pink, per doz.	
doz.	7 0-9 0	bun.	9 0-12 0
—yellow, large		Honesty, per	
blooms, per		doz. bun.	18 0-30 0
doz.	5 0-6 0	Hyacinths, Roman,	
—pink, large		per doz. bun.	36 0-42 0
blooms, per		12's	
doz.	7 0-9 0	Lilac, white, per	
—bronze, large		doz. sprays	8 0-9 0
blooms, per		Lilium longiflorum	
doz.	7 0-9 0	long, per doz.	7 0-8 0
above colours		—speciosum	
—medium blooms,		album, long,	
per doz.	5 0-6 0	per doz.	4 0-5 0
—white spray		—short, per doz.	3 6-4 6
per doz. bun.	30 0-36 0	—speciosum	
—yellow spray,		rubrum, long,	
per doz. bun.	24 0-36 0	per doz.	4 6-6 0
—pink, spray,		—short, doz.	
per doz. bun.	27 0-36 0	blooms	3 0-3 6
—bronze spray,		Lilly-of-the-Valley,	
per doz. bun.	24 0-36 0	per doz. bun.	30 0-36 0
Croton leaves		—Cattleyas	24 0-30 0
per doz.	1 9-2 6	—Cypripediums	5 0-7 0
Daffodils, single,		Poinsettia, per	
per doz. bun.	30 0-36 0	doz. blooms	18 0-24 0
Fern, French,		Roses, per doz.	
per doz. bun.	10 0-12 0	blooms, Rich-	
French Flowers		mond	10 0-12 0
—Acacia (Mi-		—Liberty	10 0-12 0
mosa) per doz.		—Madame	
bun.	12 0-15 0	Butterfly	12 0-15 0
—Anemone De		—Madame Abel	
Caen, per doz.		Chateray	10 0-12 0
bun.	21 0-24 0	—Molly Sharman	
Eucalyptus, per		Crawford	
pad	5 0-6 0	—Ophelia	
—Marguerites		—Sunburst	
yellow, per		Smilax, per doz.	
doz. bun.	4 6-4 6	trails	2 0-2 6
		Violets	4 0-6 0

REMARKS.—It is difficult to give a correct quotation of prices for this coming week. Carnations, Roses and all Lilliums are likely to realise high prices before the market closes on Christmas Eve. Supplies of Roses from home

growers are getting very scarce, and there is likely to be very few left for the New Year's trade. Chrysanthemums are likely to be in good demand, both disbudded blooms and spray varieties, and all are arriving in good condition. Daffodils, Freesias, Hyacinths, Tulips and Poinsettias will all be in good demand, although the supplies at present are very limited in quantity. In the French department, prices will advance for most subjects, especially for Anemones, Narcissus, Ranunculus, Acacia (Mimosa) and Violets; supplies are arriving daily, but they are very limited.

Vegetables: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Artichokes, green		Mushrooms,	
per doz.	4 0-6 0	—French	1 0-2 0
Asparagus—		—cups	2 6-3 0
—English	4 0-6 0	—Broilers	1 0-2 0
—Paris Green	8 6-9 6		
—Sprue	1 3-1 6	Onions—	
Beans—		—Dutch	7 0-7 6
—Madiera, per		—English, per	
basket	2 0-6 0	cwt.	7 6-8 0
—Forced, per lb	3 0-4 0	—Valencia	9 0-10 0
—Finest	3 6-5 0	Parsnips, per	
Best	2 0-2 6	cwt.	6 0-7 0
Beets, per cwt.	6 0-8 0	Potatoes—	
Cabbage, per		—King Edward,	
tally	6 0-10 0	per cwt.	6 6-8 0
Celery, per doz.		—others	4 0-6 0
fans	16 0-30 0	New Potatoes—	
Cauliflowers—		—Algerian	0 2-0 2 1/2
—St. Malo, per		—Azores, per	
crate	6 0-7 0	case	20 0-30 0
Carrots, per bag	6 0-8 6	—Canary Island	8 0-18 0
Chicory, Belgian		—Guernsey	0 6-1 3
per lb	0 4 0 5	Rhubarb, forced	
Cucumbers, per		per doz. bun-	
doz.	18 0-30 0	dles	3 0-4 0
Endive, per doz.	2 0-3 0	Seakale, per	
Horseradish, per		punnet	3 0-3 6
bundle	1 3-2 0	Sprouts, per	
Lettuce, round,		bag	3 0-6 0
per crate	4 0-6 0	Savoy, per doz.	1 6-2 6
—French Cos,		Tomatoes, English,	
per doz.	6 0-7 0	per strike	6 0-10 0
Mint, forced	4 0-6 0	—pink, new crop	6 0-10 0
		—Canary	6 0-18 0
		Island	6 0-18 0
		Turnips, per cwt.	5 0-6 0

Fruit: Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Apples, English,		Cobnuts, per lb	1 2-1 3
per 1/2-sieve		Dates (Tunis),	
—Cox's special	10 0-15 0	per doz. cartons	4 0 6 0
—best	6 0-8 0	Grapes, per lb	
—others	3 0-4 0	Alicante	1 6-2 6
—Allington Pippin	2 0-3 0	—Guernsey	0 10-1 6
Apples, Cooking—		—Colmar	1 6-3 6
—Bramley's		—Muscat	5 0-12 0
Seedling	4 0-8 0	—Almerian,	
—Lane's Prince		per barrel	15 0-27 6
Albert	4 0-6 0	Belgian	
—Blenheim		—Muscat	5 0-6 0
Pippin	4 0-8 0	—Black	1 6-2 0
Newton Wonder,		Grape Fruit,	
per bushel	4 0 6 0	—Jamaica	16 0-20 0
Apples, American		—Isle of Pines	21 0-22 6
Jonathan	18 0-15 0	—Florida	27 6-32 6
—Californian	13 0-15 6	Lemons, Messina,	
—Oregon		per box	16 0-22 0
—Newtown	17 0-19 0	—Malaga	18 0-22 0
—York Imperial	28 0-32 0	Pines	3 0-5 6
—Spitzenberg	15 0-16 0	Pears, Californian—	
Apples, Nova		—D'Anjou	18 0-24 0
Scotia		—Nells	24 0-26 0
—King's	18 0-23 0	—Comice, per	
—Blenheim,		case	15 0-20 0
barrels	16 0-21 0	South African	
—Baldwin	17 0-21 0	Oranges	12 0-18 0
Bananas	17 0-27 6	—Dania	12 0-20 0
Brazils, per cwt.	90 0-100 0	—Jamaica	12 0-16 0
Chestnuts,		—Murci	12 0-20 0
Italian, per		—Malaga	12 0-23 0
bag	20 0 25 0	Walnuts, French,	
—French, per		per bag	7 0-8 0
bag	15 0-22 0	—Cornus	40 0-45 0

REMARKS.—Ample supplies of produce are available for the Christmas trade which, on the whole, has been fairly good up to the time of writing. The quantities of Apples from the North American Continent are heavy, and the prices show very little variation except for best Newtowns, which are inclined to be a firmer trade. Home-grown fruits of Cox's Orange Pippin have been in very heavy supply for the time of year, and have sold well. Oranges are lower in price due to heavy shipments; most other fruits are in moderate demand. Hothouse Grapes are an important line just now, and although consignments are large, they are cleared each day. Pineapples are also in popular demand at slightly advanced rates. Forced Beans, Peas and Potatoes are selling fairly well, considering their high prices. Forced Asparagus, however, is a rather slow trade owing to lack of colour compared with French Paris Green. Mushrooms are plentiful and cheaper, which is usual immediately before Christmas. Rather heavy shipments of Cauliflowers from St. Malo have brought down prices for these vegetables. Sprouts are wanted, and are realising higher prices. Cucumbers are scarce and costly. New Potatoes from the Azores, Canary Islands and Algeria are selling very slowly. Green vegetables are reasonable in price and fairly plentiful. The trade in old Potatoes is unchanged.

GLASGOW.

While the tone of the cut flower market was firm during the past week, there was little or no expansion in the volume of business transacted. Chrysanthemum blooms of good quality are becoming scarce, and commanded high prices as follows:—December Gold, 1/6 to 2/- per bunch of 6; Phyllis Cooper and Florrie King, 1/9 to 2/-; Western King, 1/6 to 1/9; Niveus, 1/3 to 1/9; Lucy Loupe, 1/3 to 1/6; Baldock's Crimson, Mary Morris and Cheshunt White, 1/- to 1/6; Miss Wilcox, Ada Brooker, and Ethel Thorpe, 1/- to 1/3; Sunshine, Winter Cheer and Framfield Pink, 9d. to 1/3. Small sprays made 10d. to 1/6, and large, 2/- to 3/6. Carnations were worth from 5/- to 7/- per dozen, and Ophelia and Madame Butterfly Roses, 6/- to 8/-; French Narcissus further advanced to 32/- per pad; while Arum Lilies rose to 10/-; and Lillium longiflorum kept steady at 6/- to 7/-; French Violets realised from 3/- to 6/-; English, 2/- to 3/-; and Parma, 6/- to 7/-; Anemones, 1/3 to 1/6 per bunch, and Lily-of-the-Valley, 2/6 to 3/-; Pots and bowls of Tulips and Hyacinths were plentiful at 1/6 to 1/9 for small size, 2/- to 2/6 for medium, and 3/- to 4/6 for large. Christmas trees were in moderate demand. Small-sized specimens for table decoration sold at 6d. and 1/-; medium from 5/- to 12/-, and large from 15/- to 40/-; Berried Holly ranged from 8/- to 20/- per bag; green and variegated forns, 5/- to 10/-; Mistletoe, 5/- to 6/- per stone; Perpetua, 5/- to 6/- per small hamper; Solanum berries, 14/- to 20/- per pad; and Ruscus, 10/- to 12/- per pad.

There was more activity in the fruit market than has been the case during the past two weeks. Apples and Oranges constituted the greater part of the business. American Apples were 1/- to 2/6 per barrel lower, but case fruits maintained previous prices. Oranges were in short supply, despite the arrival of cargoes from Valencia and Jaffa during the week. The latter averaged 18/- per case, and Friday's quotations of the former class were as follows: 360 and 504, 12/6 to 14/6; 300, 14/6 to 20/-; 420, 24/- to 35/-; and 714, 24/- to 28/-. Tangerines varied from 1/7 to 2/3, according to size of box, and the Blue Goose brand of Grape Fruit made 30/- per case. Scotch Tomatoes were practically unsaleable, and nominal prices were reported for Tenerife brands.

Business is to be suspended on New Year's Day.

THE WEATHER.

THIS was the coldest but sunniest November with the single exception of that of 1913, since the local records of those elements commenced, in 1871 and 1891 respectively. These conditions were brought about by a prevalence of northerly and easterly winds. During the opening week or so, warm and very unsettled weather was experienced, but after the 8th, no day had a mean temperature of so much as 39°, and on seven days the mean (for the 24 hours) was below the freezing point. Commencing on the 9th, ground frost occurred every night, no rain fell for a fortnight, and there was a persistence of exceptionally light easterly winds. The mean temperature was 38°, or 5° below the Southport 50 years' average; and the daily range was considerable. Rain fell on 12 days, or 5 fewer than normal; and the total quantity was 3.03 inches, or 0.05 inch below the average. Of sunshine, 81 hours were recorded, the normal being exceeded by 27 hours. Wind movement was 91 miles per day below the average. Frost was registered in the shade on 15 nights, and upon the grass on 22 nights, but the absolute minima of temperature were not low, being 24° and 16° respectively. Scarcely any snow fell; but fogs were unusually frequent. Two or three aurora preceded the wintry weather.—Joseph Bazantell, *The Fernley Observatory, Southport.*

GARDENING APPOINTMENTS.

Mr. H. Wales, for ten years Foreman to W. H. St. QUIN, Esq., Scampston Hall Gardens, Rillington, Malton, Yorkshire, as Gardener to W. M. SHIPMAN, Esq., Thelwall Halls, Grappenhall, Cheshire.

Mr. J. S. Mitchell, for the past two years Foreman at Cortachy Castle, Kilmuir, Forfarshire, as Gardener to SIR FELIX SCHUSTER, Verley Place, Fernhurst, near Haslemere, Surrey.

Mr. D. B. Whitelaw, for nearly four years Gardener to SIR HENRY HALLATYNE, Monkridge, Haddington, as Gardener to the RIGHT HON. EARL BATHURST, at Cirencester Park, Cirencester, Gloucestershire.

Mr. D. Manning, for fifteen years Horticultural Instructor to the Gloucestershire County Council, and previously at the Royal Botanic Garden, Edinburgh, as Horticultural Superintendent to the DEVON COUNTY COUNCIL, from January 1, 1926. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. A. Brown, for the past four years Gardener to COL. O. R. MIDDLETON, at The Chase, Ross-on-Wye, Herefordshire, as Gardener to MAJOR D. W. GRAHAM, Bryndesbury Court, Usk, Monmouthshire.

Mr. T. Botting.—We regret that in our issue of December 19 Mr. T. Botting's name was given in error as Mr. T. Botteny.

Mr. J. Yandell, for the past five years Gardener to SIR FRANCIS BURDETT, Bart., Ramsbury Manor, Wiltshire, as Gardener to the Rt. Hon. LORD WHARTON, Halswell Park, Bridgwater, Somerset. (Thanks for 2/- for R.G.O.F. Box.—EDS.)

Mr. R. Blakeman, for the past five years employed in Wellesbourne House Gardens, Warwick, as Gardener to F. HARGREAVES, Esq., Friz Hill, Walton, Warwick.

Books for the New Year.

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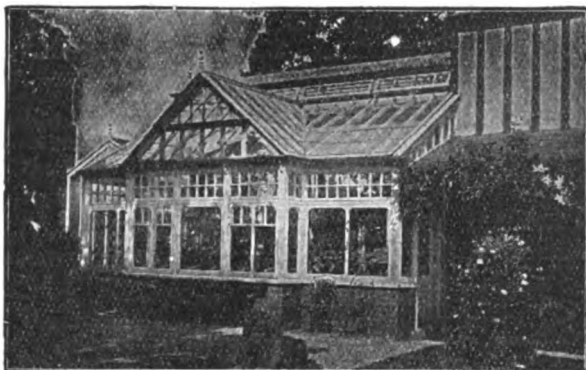
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OUR New Edition (No. 96) of "Hardy Plants worth Growing" contains over 600 illustrations from photographs and much useful information in plain talk on Natural Gardening, Autumn Colours and Winter Berries, Spring Flowering Trees and Shrubs, Plants for Rock, Dell, Glen, Bog, and Water Gardens, Shrubberies, Pergolas, bare places under trees, etc. Copies may be had gratis on application. Orders carriage paid.—V. N. GAUNTLETT & CO., LTD., Japanese Nurseries, Chiddingfold, Surrey.

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Fine opportunity for quick turnover. Well stocked.
£1,000 or offer.—Reply, W. L., Box 30, 5, Tavistock
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an artistic, modern residence of 4 reception and
6 bedrooms; the grounds, which include timber, stream
and trout-pond, would lend themselves to landscape
gardening.—Mrs. WOOLF, Rotherwood, Churt, Surrey.**BUSINESS CARD.****J. & A. McBEAN, Orchid Specialists, Cooks-**
bridge, Sussex.**NOTICE.****HAVE YOU PROVIDED?** See United
Horticultural Benefit and Provident Society's
Advertisement on Page xii.**TENDERS.****WEMBLEY URBAN DISTRICT COUNCIL.**
PUTTING GREEN.**THE** above Council invite Tenders for the
laying out of a Putting Course, approximately ½
acre, including drainage and fencing, and for the con-
struction of approximately 440 yards of hoggin footpaths
in King Edward VII Park, Wembley.Specification and Form of Tender may be obtained
from the undersigned, from whom sealed Tenders in the
envelope supplied must be delivered on or before noon
on Wednesday, the 6th January, 1926.The Council do not bind themselves to accept the lowest
or any Tender.**CECIL R. W. CHAPMAN**

Engineer and Surveyor.

Council Offices,
WEMBLEY.

23rd December, 1925.

PLANTS, &c., FOR SALE.*Small Classified Advertisements. Twenty words*
(or three lines including headline) 4s. and 1s.
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of a line). Double rates for front cover. Fee
for having replies addressed to this office, 1s.
over and above the amount payable for all
words appearing in the advertisement, including
our own address. Displayed advertisements, 8s
*per inch, or 10s. facing editorial matter.***PALMS, Phoenix Canariensis, Chamerops**
Excelsa, Kentia Forsteriana, Cocos, Flexuosa, and
Phoenix Roebelinii. New price list now out. Also a
quantity of Dracaenas, Indivisa, Veitchii, and Bruantii,
to offer in all sizes. Fine lot of stuff.—For price list,
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Geraniums, Ericas, Lilies, Ferns and How to Grow Them,
by J. E. SMITH, 3/6, post free.—**SMITH, London Fern**
Nurseries, London, S.W.9.**100,000 LARGE GARDEN FERNS,**
30/- 100, variety; wanted 1,000
large Aspidistras for dividing. Catalogue free.—
SMITH, Fernery, London, S.W.9.**TO OFFER** in quantity, transplanted Native
Larch and Scotch Fir, all sizes. Special quotations
for quantities on application to **D. STEWART & SON,**
LTD., Ferndown Nurseries, near Wimborne, Dorset.**HEDGING specialist, Thuja, Privet, Laurels,**
Quickthorns; list free; satisfaction guaranteed;
oval-leaved Privet, two years transplanted, 14/6. Quick-
thorns, 7/-, two years transplanted, per 100; Carriage paid.
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Road, N.W.**PAEONIES, 12 best named, 10/-; Delphiniums,**
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MORLE & CO., as above.**HELLEBORUS NIGER (Xmas Roses),**
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full of flower bud for planting or forcing, 18/- and 24/-
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clean and true to name, 7/6, 10/6 each, F.O.R. Special
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Reds and Whites same price; carriage paid per passenger
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ready, copy free on application.—**MANAGER,**
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—so can you. Send for the 140 page Beacon
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Clogs, 5/11 (post 9d.); all guaranteed.—Write now to
BARBOURS, LTD, 66, Beacon Buildings, South
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Ornamental Iron and Wire Work of every
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separate lists.—**BOULTON & PAUL, LTD., Norwich.****BIRDS' BATHS, Sundials, Vases, Statuary,**
Birds' Nesting Boxes, etc.—Catalogue (No. 3),
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Advertisers desiring their Advertisements repeated must give full particulars. Name and address alone are insufficient.

Gardeners writing to Advertisers of Vacant Situations are recommended to send them copies of testimonials only, retaining the originals. To part with original documents is to run a great risk of their being mislaid.

When addressing Box numbers, it is essential to give the initials or pseudonym, as well as the correct number of the box.

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DENBIGHSHIRE EDUCATION AUTHORITY.

APPLICATIONS are invited for the post of HORTICULTURAL INSTRUCTOR for the Llysfael Farm Institute, Ruthin.

The Salary offered is £200 per annum, rising by annual increments of £10 to £230, together with a house free of rent, rates and taxes. A knowledge of Welsh is not essential but desirable.

Forms of application, together with lists of duties, may be obtained, on the receipt of a stamped addressed foolscap envelope, from the undersigned, and must be returned, together with copies of not more than three recent testimonials, not later than January 4th, 1926.

J. C. DAVIES,
Secretary and Director of Education.

Education Offices,
Ruthin.
11th December, 1925.

PRIVATE.

WANTED. — WORKING GARDENER, HEAD of two; wages about 50/- with house; must be thoroughly experienced, keen, active, energetic; Age, references and experience to:—A. WHITEHEAD, Linda Vista, Abergavenny.

EXPERIENCED SINGLE-HANDED GARDENER, immediately; thorough knowledge fruit, flowers, greenhouse, vegetables.—Apply, with salary required, J. B. SCOTT, Moss Pit House, Stafford.

WANTED, good man as **SECOND**; experienced Inside and Out, used to motor mower preferred; also **JOURNEYMAN**, chiefly Outside, and able to take duty.—Apply by letter, stating wages required, with bothy, etc., H. HEATH, Hallgrove, Bagshot, Surrey.

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CAN any Lady or Gentleman recommend a Couple between 30 and 40 years of age, no children; Husband **GARDENER**, Wife **HOUSEKEEPER-HOUSEMAID**. To live in and take charge of house in Eastern Counties. Good experience and training absolutely necessary.—Write **LADY W.**, Sharp's Library, 4, Berkeley Square, W.1.

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WORKING NURSERY MANAGER required immediately by well known firm to supervise the work and control the staff of a large nursery, mainly hardy herbaceous. First-rate ability, character and experience essential; country; applications treated confidentially.—Apply, with fullest possible particulars and stating salary expected, to L. S., Box 55, Tavistock Street, Covent Garden, W.C. 2.

NURSERY FOREMAN.—Wanted, young active man with a thorough knowledge of Forest Trees, Conifers, Ornamental stuff, Fruit Trees and Roses, capable of taking sole charge when necessary; preference given to single man.—Apply, with copies of references, stating if disengaged, or when, age and salary, to **NURSERYMEN**, Box 21, 5, Tavistock Street, Covent Garden, W.C. 2.

FOREMAN ROSE GROWER wanted, used to growing very large quantities and handling men; knowledge of fruit tree growing a help but not essential. State age, where experience has been gained, where last employed and wages expected, and send copies of references. Replies treated as strictly confidential. Good position for the right man.—Reply, **ROSES**, Box 13, 5, Tavistock Street, Covent Garden, W.C. 2.

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WANTED. — GROWER for Chrysanthemums, Cucumbers and Tomatoes; single.—Apply, with satisfactory references, stating age, experience and wages required to **JOHN BASHAM AND SONS**, Fair Oak Nurseries, Bassaleg, Newport, Mon.

WANTED, competent **KNIFESMAN** with general knowledge of fruit trees, roses, shrubs, forest trees, etc.—Apply, with copies of testimonials and wages wanted, with free house and firing, to **MANAGER**, Lissadell, Sligo.

WANTED, MANAGER, flower seed department, wholesale seed merchants, country.—**SEEDS**, Box 52, 5, Tavistock Street, Covent Garden, W.C. 2.

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PRIVATE.

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GARDENER, HEAD WORKING; life experience in all branches; good references; married, no family; disengaged.—**ELLIS**, Nr. Earley Station, Reading, Berks.

COL. R. SLOANE STANLEY wishes to highly recommend his **HEAD WORKING GARDENER**; experienced in all branches; over 5 years present situation.—**PREECE**, Bay House Gardens, Gosport, Hants.

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Advertisers may have replies to their advertisements addressed to the **GARDENERS' CHRONICLE** Office.

A fee of 1s. is charged for this service, and initials, Box number and our own address must also be included in the number of words paid for.

Cheques and postal orders are to be made payable to **GARDENERS' CHRONICLE, LTD.**, and crossed " & Co."

5, Tavistock Street, Covent Garden, W.C. 2.

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